

# **ASVAB Norms for the Career Exploration Program**

Defense Manpower Data Center

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## **ASVAB Norms for the Career Exploration Program**

National norms for the Armed Services Vocational Aptitude Battery (ASVAB) are provided for students in grades 10, 11, and 12, as well as for postsecondary schools (2-year colleges), as part of the Career Exploration Program. These norms enable students to know how their scores compare with a nationally representative sample of youth in their particular grades.

### **Norming Samples**

The norming samples were obtained from aptitude test data collected as part of the Profile of American Youth (PAY97) project. This large-scale research project was sponsored by the U.S. Department of Defense (DoD) with the cooperation of the U.S. Department of Labor (DoL). PAY97 is intended to update current national norms for the ASVAB. PAY97 was conducted by the National Opinion Research Center (NORC) at the University of Chicago and is described in detail by Moore, Pedlow, and Wolter (1999).

The norming samples<sup>1</sup> were drawn to be representative nationally of two groups of American youth and hence to support two programs of interest to DoD:

1. The Enlistment Testing Program (ETP), which provides an assessment of about 6,000 American youth age 18-23 as of June 1, 1997, with oversampling for Hispanic and Non-Hispanic Black youth.
2. The Career Exploration Program (CEP), which provides an assessment of approximately 4,700 youth expected to be enrolled in grades 10, 11, and 12 as of fall 1997.

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<sup>1</sup> A third sample was drawn at the same time for DoL consisting of youth age 12-16 and is known as the National Longitudinal Survey of Youth (NLSY97).

The norms described in this report for grades 10, 11, and 12 were derived from CEP data. Norms for students in postsecondary schools (2-year colleges) were derived from the ETP data.

The norming samples drawn were based on a stratified clustered random sampling design. The basis of the sampling was the housing unit (HU). All housing units within the 50 states and the District of Columbia had a nonzero probability of selection.

Representative housing units were selected from a large sample of over 90,000 units. Screening interviews were conducted on the occupied units, and selected subsamples of eligible youth were identified for participation in the ASVAB testing.

The testing was done using a Computerized Adaptive Testing (CAT) version of the ASVAB. All testing was conducted under standardized conditions at Sylvan Learning Centers. Serious efforts were expended to encourage participation in the testing. Respondents who agreed to participate in the approximately 1.5 hours of testing were paid \$75 as an incentive.

Table 1 shows the number of youth targeted for the CEP sample, the number of eligibles found, and test completion rates by grade (Moore et al., 1999). The overall completion rate was about 75 percent of eligible youth, and completion rates were similar for the various grades. The postsecondary sample was part of the larger ETP sample. The test completion rate for this larger sample was 77 percent of eligible youth.

The bulk of the sample screening and testing was done in the summer and fall of 1997, but some testing was done through April 1998.

**Table 1. Target Numbers and Completion Rates by Grade for the CEP Sample**

| <u>Group</u>                   | <u>Target</u> | <u>Eligible</u> | <u>Complete<br/>ASVAB</u> | <u>Completion rate<br/>(%)</u> |
|--------------------------------|---------------|-----------------|---------------------------|--------------------------------|
| 10 <sup>th</sup> grade males   | 1,151         | 1,179           | 901                       | 76.42                          |
| 10 <sup>th</sup> grade females | 1,065         | 1,085           | 827                       | 76.22                          |
| 11 <sup>th</sup> grade males   | 1,089         | 1,032           | 730                       | 70.74                          |
| 11 <sup>th</sup> grade females | 1,018         | 1,017           | 789                       | 77.58                          |
| 12 <sup>th</sup> grade males   | 967           | 941             | 684                       | 72.69                          |
| 12 <sup>th</sup> grade females | 874           | 935             | 724                       | 77.43                          |
| Total                          | 6,164         | 6,189           | 4,655                     | 75.21                          |

## Weighting

Data from large-scale national samples are normally weighted to achieve an unbiased estimate of population responses. The weights for the CEP and ETP samples were computed in six stages:

1. Weight for selection probability,
2. Weight for nonresponse to the screening instrument,
3. Weight for subsampling into the CEP and ETP samples,
4. Weight for merging cross-sectional and supplemental samples,
5. Weight for nonresponse to the main data collection and testing, and
6. Poststratification weight to match the U.S. population.

The weights for the CEP sample (grades 10, 11, and 12) were developed by NORC (Moore et al., 1999). The final stage post-stratification weights corrected the sample to the national population by weighting each gender, race/ethnicity, and grade cell to the national population, based on the October 1997 Current Population Survey (CPS).<sup>2</sup>

<sup>2</sup> Bureau of Labor Statistics, U.S. Department of Labor.

Weights for the ETP sample, of which the post-secondary schools are a subset, were developed by MaCurdy and Vytlačil (2003) of Stanford University. These final stage post-stratification weights correct the sample to the national population by weighting each gender, race/ethnicity, age, and respondent's education cell to the national population based on the October 1997 Survey of Income and Program Participation (SIPP).<sup>3</sup> These authors used the SIPP data because the ages and timing of the measurement of educational attainment in the SIPP were thought to be better aligned with the ETP sample.

## **Representativeness of Norms**

Considerable attention has been given to the representativeness of the norms. Norms for a test describe how a target reference population performs on a test. To be truly representative with respect to test scores, the norming sample must be fully representative of the target population on any demographic variable that makes a unique contribution to the variance of test scores.

Sims and Hiatt (2003a) examined the general question of the relationship of demographics to aptitude scores and which demographics make unique contributions to test score variance. They found that a norming sample for aptitude tests must be representative of the underlying population with respect to the demographic variables of age, race/ethnicity, gender, respondent's education, and a social-economic variable, such as mother's education. They also found that, if a norming sample was indeed representative with respect to these five critical demographics, it need not also be representative with respect to other demographics (e.g., number of respondents/siblings in the household, degree of urbanization, or census region).

Tables 2, 3, and 4 compare (Sims and Hiatt, 2003b) the demographic characteristics of the norming sample with those of the national population for grades 10, 11, and 12. The agreement was found to be generally good. As previously noted, the sample was post-stratification weighted by grade, gender, and the three broad race/ethnic groupings of

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<sup>3</sup> Census Bureau, U. S. Department of Commerce.

Black, Hispanic, and Other. It is therefore expected that the weighted sample and the U.S. population should agree closely.

Note that there are some small differences among the population values and the weighted sample for the White, Asian, American Indian, and Other subgroupings. These differences are mainly the result of the small sample sizes for some of these groups and the categorization used by the CPS which does not record an “Other” category.

In addition, Sims and Hiatt (2003b) examined the norming sample for grades 10, 11, and 12 with respect to the five critical demographic variables (age, race/ethnicity, gender, respondent’s education, and mother’s education) and concluded that it was indeed representative of the underlying population and hence was a satisfactory sample for use in developing norms.

As a further check on the norms, these authors also examined changes over time in math and verbal scores for 17-year-old youth from the 1979 and 1997 ASVAB norming samples with those from 17-year-old youth from the National Assessment of Educational Progress (NAEP) conducted by the National Council on Educational Statistics. The agreement on changes in test scores over time on the two instruments was excellent and lends further credence to the new CEP norms.

Because the testing was spread out over many months, there was some concern that youth tested late in the sampling may have been reluctant to test and hence may not have given their full effort. This concern appears to have been unwarranted. Sims and Hiatt (2003c) analyzed a posttest survey and found that respondents tested late in the sampling period reported trying just as hard as those who tested during the first month of the data collection.

**Table 2. Demographic Characteristics of the Norm Sample and the U.S. Population in Grade 10**

| <u>Characteristic</u> | <u>Unweighted sample</u> | <u>Percentage</u>      |                         |
|-----------------------|--------------------------|------------------------|-------------------------|
|                       |                          | <u>Weighted sample</u> | <u>U.S. population*</u> |
| Gender                |                          |                        |                         |
| Male                  | 52.06                    | 51.41                  | 51.42                   |
| Female                | 47.94                    | 48.59                  | 48.58                   |
| Race/ethnic           |                          |                        |                         |
| Black                 | 24.29                    | 17.23                  | 16.73                   |
| Hispanic              | 18.20                    | 14.33                  | 12.65                   |
| Other                 | 57.51                    | 68.44                  | 70.61                   |
| White                 | (53.97)                  | (65.11)                | (64.80)                 |
| Asian                 | (2.20)                   | (2.05)                 | (4.87)                  |
| American Indian       | (0.41)                   | (0.39)                 | (0.94)                  |
| Other                 | (0.93)                   | (0.89)                 | (0.00)**                |

\* October 1997 CPS.

\*\* CPS responses do not contain an "Other" group.

**Table 3. Demographic characteristics of the norm sample and the U.S. population in Grade 11**

| <u>Characteristic</u> | <u>Unweighted sample</u> | <u>Percentage</u>      |                         |
|-----------------------|--------------------------|------------------------|-------------------------|
|                       |                          | <u>Weighted sample</u> | <u>U.S. population*</u> |
| Gender                |                          |                        |                         |
| Male                  | 48.06                    | 50.67                  | 50.67                   |
| Female                | 51.94                    | 49.33                  | 49.33                   |
| Race/ethnic           |                          |                        |                         |
| Black                 | 21.72                    | 14.75                  | 16.09                   |
| Hispanic              | 17.64                    | 13.25                  | 13.08                   |
| Other                 | 60.63                    | 72.00                  | 70.83                   |
| White                 | (55.89)                  | (67.04)                | (65.96)                 |
| Asian                 | (2.57)                   | (2.46)                 | (3.99)                  |
| American Indian       | (0.59)                   | (0.71)                 | (0.88)                  |
| Other                 | (1.58)                   | (1.79)                 | (0.00)**                |

\* October 1997 CPS.

\*\* CPS responses do not contain an "Other" group.

**Table 4. Demographic Characteristics of the Norm Sample and the U.S. Population in Grade 12**

| <u>Characteristic</u> | <u>Unweighted sample</u> | <u>Percentage Weighted sample</u> | <u>U.S. population*</u> |
|-----------------------|--------------------------|-----------------------------------|-------------------------|
| Gender                |                          |                                   |                         |
| Male                  | 48.54                    | 50.38                             | 50.45                   |
| Female                | 51.46                    | 49.62                             | 49.55                   |
| Race/ethnic           |                          |                                   |                         |
| Black                 | 23.17                    | 15.95                             | 15.87                   |
| Hispanic              | 17.06                    | 13.01                             | 12.00                   |
| Other                 | 59.78                    | 71.04                             | 72.13                   |
| White                 | (54.80)                  | (65.60)                           | (66.77)                 |
| Asian                 | (3.34)                   | (3.60)                            | (3.82)                  |
| American Indian       | (0.50)                   | (0.71)                            | (1.54)                  |
| Other                 | (1.14)                   | (1.13)                            | (0.00)**                |

\* October 1997 CPS.

\*\* CPS responses do not contain an “Other” group.

MaCurdy and Vytlačil (2003) have examined the ETP sample from which the postsecondary sub-sample was drawn and conclude that it is also representative of the underlying population.

## **Norm Distributions**

All ASVAB scores were initially generated on the 1997 ASVAB Score Scale (Segall, 2004). These scores were referenced to a representative group of American youth age 18-23 known as the 1997 Youth Population. Most scores on the high school versions of the ASVAB are converted into other metrics to facilitate use in the CEP. Data shown in Tables 5 and 6 and in the appendix are used to make these conversions.

The norming tables for students in grades 10, 11, 12, and 2-year colleges were developed by Hiatt and Sims (2003) using the data samples described in the preceding sections.

The ASVAB Summary Results sheet reports scores in three metrics. Grade-specific subtest standard scores are shown on the left, and grade and gender-specific percentile scores are shown on the right. The score bands in the center of the form represent a graphical display of the grade-specific subtest standard scores. In addition, a Military Entrance Score (AFQT) is shown at the bottom left.

The AFQT score is expressed as a percentile in the 1997 Youth Population (age 18-23) reference group. It is a composite used by DoD as a measure of general aptitude and is made up of the sum of scores from Arithmetic Reasoning, Mathematics Knowledge, and two Verbal (AR+MK+2VE) subtests. It is the only score on the report sheet referenced to the 18 to 23-year-old youth population.

## Standard Scores

The grade-specific ASVAB subtest standard scores are standardized to have a mean of 50 and a standard deviation of 10 in the indicated grade in the 1997 CEP sample, using the means and standard deviations shown in Table 5.

**Table 5. ASVAB Subtest Means and Standard Deviations by Grade in Youth Population Metric**

| <u>Subtest</u>               | <u>Grade</u>           |             |                        |             |                        |             |                      |             |
|------------------------------|------------------------|-------------|------------------------|-------------|------------------------|-------------|----------------------|-------------|
|                              | <u>10<sup>th</sup></u> |             | <u>11<sup>th</sup></u> |             | <u>12<sup>th</sup></u> |             | <u>Postsecondary</u> |             |
|                              | <u>Mean</u>            | <u>Std.</u> | <u>Mean</u>            | <u>Std.</u> | <u>Mean</u>            | <u>Std.</u> | <u>Mean</u>          | <u>Std.</u> |
| General Science (GS)         | 46.256                 | 9.451       | 48.531                 | 9.542       | 49.479                 | 9.724       | 50.198               | 8.747       |
| Arithmetic Reasoning (AR)    | 45.204                 | 10.289      | 47.793                 | 10.634      | 48.939                 | 10.575      | 50.825               | 8.269       |
| Word Knowledge (WK)          | 43.469                 | 9.409       | 45.836                 | 9.511       | 47.519                 | 9.075       | 50.375               | 8.846       |
| Paragraph Comprehension (PC) | 44.010                 | 11.144      | 46.503                 | 10.798      | 48.050                 | 10.380      | 50.784               | 8.778       |
| Math Knowledge (MK)          | 47.297                 | 9.290       | 50.149                 | 9.676       | 51.377                 | 9.833       | 51.661               | 7.932       |
| Mech. Comprehension (MC)     | 45.589                 | 10.052      | 47.354                 | 9.879       | 48.491                 | 9.874       | 49.825               | 9.004       |
| Auto & Shop Information (AS) | 43.153                 | 8.252       | 44.903                 | 8.573       | 46.239                 | 9.144       | 49.804               | 9.640       |
| Electronics Information (EI) | 43.763                 | 9.387       | 45.447                 | 9.144       | 47.425                 | 9.594       | 50.489               | 9.413       |
| Assembling Objects (AO)      | 46.965                 | 9.791       | 48.563                 | 10.263      | 49.399                 | 9.978       | 50.177               | 9.729       |
| Verbal (VE=WK+PC)            | 43.301                 | 9.966       | 45.863                 | 9.932       | 47.580                 | 9.465       | 50.584               | 8.595       |

Note: Because of its short length and relatively low reliability, PC is never used by itself as a subtest but is always combined with WK to form VE for use in composites. VE is functionally identical to the Verbal Skills Composite described in Table 6.

Most of the mean values for students in grades 10, 11, and 12 in Table 5 are below 50, as expected, because these data are standardized in the 18 to 23-year-old youth population. The Assembling Objects (AO) subtest is not currently included in the CEP but is shown because it might be included at some point in the future.

The grade-specific Career Exploration Composites are constructed from combinations of ASVAB subtests and are standardized to have a mean of 50 and standard deviation of 10 in the indicated grade in the 1997 CEP sample using the means and standard deviations shown in Table 6.

**Table 6. Career Exploration Composite Means and Standard Deviations by Grade in Youth Population Metric**

| <u>Career Exploration Composite</u>     | <u>Grade</u>           |             |                        |             |                        |             |                      |             |
|---|------------------------|-------------|------------------------|-------------|------------------------|-------------|----------------------|-------------|
|   | <u>10<sup>th</sup></u> |             | <u>11<sup>th</sup></u> |             | <u>12<sup>th</sup></u> |             | <u>Postsecondary</u> |             |
|   | <u>Mean</u>            | <u>Std.</u> | <u>Mean</u>            | <u>Std.</u> | <u>Mean</u>            | <u>Std.</u> | <u>Mean</u>          | <u>Std.</u> |
| Math Skills (AR+MK)                     | 46.027                 | 9.776       | 48.902                 | 10.194      | 50.162                 | 10.241      | 51.324               | 7.905       |
| Verbal Skills (PC+WK)                   | 43.301                 | 9.966       | 45.863                 | 9.932       | 47.580                 | 9.465       | 50.584               | 8.595       |
| Science and Technical Skills (GS+EI+MC) | 44.632                 | 9.615       | 46.752                 | 9.493       | 48.280                 | 9.760       | 50.183               | 8.915       |

## Percentile scores

Tables in the appendix are used to convert ASVAB subtest or Career Exploration Composite youth population standard scores (SSS) into grade and gender-specific percentiles. Separate headings are shown for males (M), females (F), and the combined (C) gender groups. For reference, the tables also show the youth population score (YP) corresponding to each SSS for the 18 to 23-year-old population.

For example, an SSS of 50 on the GS subtest corresponds to the 63<sup>rd</sup> percentile of performance for male 10<sup>th</sup> grade students. This same SSS of 50 on GS also corresponds to the 52<sup>nd</sup> percentile of the age 18-23 youth population.

## References

- Hiatt, C., & Sims, W. (2003). Norming tables for the Student Testing Program (STP) (Tech. Rep CAB D0009233.A2). Alexandria, VA: The CNA Corporation.
- MaCurdy, T., & Vytlačil, E. (2003). *Establishing new norms for the AFQT using data from PAY97* (Tech. Rep.). Stanford, CA: Stanford University, Department of Economics.
- Moore, W., Pedlow, S., & Wolter, K. (1999). *Profile of American youth 1997 (PAY97): Technical sampling report* (Tech. Rep.). Chicago, IL: National Opinion Research Center.
- Segall, D. O. (2004). *Development and evaluation of the 1997 ASVAB score scale*. Seaside, CA: Defense Manpower Data Center.
- Sims, W., & Hiatt, C. (2003a). *On the representativeness of norming samples for aptitude tests* (Tech. Rep. CAB D0007188.A2). Alexandria, VA: The CNA Corporation.
- Sims, W., & Hiatt, C. (2003b). *An evaluation of the Student Testing Program (STP97) norming sample* (Tech. Rep. D0007499.A2). Alexandria, VA: The CNA Corporation.
- Sims, W., & Hiatt, C. (2003c). *Attitudes, incentives, and test performance* (Tech. Rep. CAB D0007502.A2). Alexandria VA: The CNA Corporation.

# Appendix: CEP Norming Tables

Table A-1. Male (M), Female (F), Combined-Gender (C), and Youth Population (YP) Norms for the ASVAB Subtest General Science (GS)

| SSS | 10th grade |    |    | 11th grade |    |    | 12th grade |    |    | Post Secondary |    |    | YP |
|-----|------------|----|----|------------|----|----|------------|----|----|----------------|----|----|----|
|     | M          | F  | C  | M          | F  | C  | M          | F  | C  | M              | F  | C  |    |
| 24  | 1          | 1  | 1  | 1          | 1  | 1  | 1          | 1  | 1  | 1              | 1  | 1  | 1  |
| 25  | 2          | 1  | 1  | 1          | 1  | 1  | 1          | 1  | 1  | 1              | 1  | 1  | 1  |
| 26  | 2          | 1  | 2  | 1          | 2  | 1  | 1          | 1  | 1  | 1              | 1  | 1  | 1  |
| 27  | 3          | 2  | 2  | 2          | 2  | 2  | 1          | 1  | 1  | 1              | 1  | 1  | 1  |
| 28  | 4          | 2  | 3  | 2          | 3  | 2  | 1          | 1  | 1  | 1              | 1  | 1  | 2  |
| 29  | 4          | 3  | 3  | 2          | 4  | 3  | 2          | 2  | 2  | 1              | 2  | 1  | 2  |
| 30  | 5          | 4  | 5  | 3          | 5  | 4  | 3          | 3  | 3  | 1              | 2  | 1  | 2  |
| 31  | 6          | 6  | 6  | 5          | 6  | 5  | 4          | 4  | 4  | 1              | 2  | 2  | 3  |
| 32  | 8          | 8  | 8  | 5          | 6  | 6  | 4          | 4  | 4  | 2              | 2  | 2  | 4  |
| 33  | 10         | 10 | 10 | 7          | 7  | 7  | 6          | 6  | 6  | 2              | 3  | 2  | 5  |
| 34  | 12         | 12 | 12 | 7          | 9  | 8  | 6          | 7  | 7  | 3              | 4  | 3  | 7  |
| 35  | 14         | 14 | 14 | 9          | 10 | 10 | 7          | 9  | 8  | 3              | 6  | 5  | 8  |
| 36  | 15         | 16 | 16 | 10         | 12 | 11 | 9          | 11 | 10 | 4              | 6  | 5  | 9  |
| 37  | 18         | 19 | 19 | 12         | 14 | 13 | 9          | 14 | 12 | 6              | 10 | 8  | 12 |
| 38  | 20         | 24 | 22 | 14         | 17 | 16 | 10         | 17 | 14 | 7              | 12 | 9  | 13 |
| 39  | 23         | 28 | 25 | 16         | 19 | 17 | 12         | 19 | 16 | 8              | 14 | 11 | 15 |
| 40  | 26         | 31 | 28 | 17         | 21 | 19 | 14         | 22 | 18 | 10             | 16 | 13 | 18 |
| 41  | 28         | 35 | 32 | 20         | 24 | 22 | 16         | 25 | 20 | 12             | 20 | 16 | 20 |
| 42  | 32         | 38 | 35 | 22         | 27 | 24 | 18         | 29 | 23 | 13             | 24 | 19 | 23 |
| 43  | 35         | 42 | 38 | 25         | 31 | 28 | 21         | 31 | 26 | 17             | 29 | 23 | 26 |
| 44  | 38         | 43 | 41 | 29         | 35 | 32 | 23         | 34 | 29 | 20             | 32 | 26 | 29 |
| 45  | 42         | 48 | 45 | 32         | 39 | 35 | 27         | 39 | 33 | 23             | 36 | 30 | 32 |
| 46  | 44         | 52 | 48 | 34         | 43 | 38 | 30         | 42 | 36 | 28             | 41 | 35 | 36 |
| 47  | 49         | 54 | 51 | 40         | 47 | 43 | 35         | 49 | 42 | 31             | 45 | 39 | 39 |
| 48  | 53         | 60 | 56 | 45         | 52 | 48 | 39         | 53 | 46 | 34             | 50 | 43 | 44 |
| 49  | 58         | 66 | 62 | 48         | 57 | 52 | 42         | 59 | 51 | 38             | 54 | 46 | 48 |
| 50  | 63         | 73 | 68 | 52         | 61 | 57 | 46         | 64 | 55 | 42             | 60 | 51 | 52 |
| 51  | 67         | 76 | 71 | 57         | 67 | 62 | 50         | 69 | 59 | 44             | 65 | 55 | 55 |
| 52  | 72         | 80 | 76 | 61         | 70 | 66 | 54         | 73 | 64 | 48             | 69 | 59 | 59 |
| 53  | 75         | 84 | 80 | 67         | 75 | 71 | 57         | 78 | 67 | 53             | 73 | 64 | 63 |
| 54  | 78         | 87 | 82 | 69         | 79 | 74 | 60         | 80 | 70 | 59             | 76 | 68 | 67 |
| 55  | 80         | 88 | 84 | 72         | 81 | 76 | 65         | 83 | 74 | 61             | 79 | 71 | 70 |
| 56  | 83         | 90 | 86 | 75         | 83 | 79 | 68         | 85 | 76 | 67             | 83 | 76 | 74 |
| 57  | 85         | 92 | 88 | 79         | 85 | 82 | 72         | 86 | 79 | 72             | 86 | 79 | 77 |
| 58  | 87         | 94 | 90 | 82         | 88 | 85 | 75         | 89 | 82 | 75             | 89 | 82 | 80 |
| 59  | 89         | 95 | 92 | 86         | 90 | 88 | 79         | 89 | 84 | 80             | 91 | 86 | 83 |
| 60  | 90         | 97 | 93 | 88         | 92 | 90 | 81         | 91 | 86 | 83             | 92 | 88 | 85 |
| 61  | 92         | 97 | 95 | 89         | 94 | 92 | 84         | 94 | 89 | 87             | 93 | 90 | 87 |
| 62  | 94         | 98 | 96 | 91         | 96 | 93 | 86         | 95 | 90 | 90             | 94 | 92 | 89 |
| 63  | 95         | 98 | 96 | 92         | 97 | 94 | 88         | 96 | 92 | 92             | 95 | 94 | 91 |
| 64  | 95         | 99 | 97 | 95         | 97 | 96 | 91         | 98 | 94 | 95             | 96 | 96 | 93 |
| 65  | 96         | 99 | 97 | 96         | 98 | 97 | 92         | 98 | 95 | 96             | 98 | 97 | 94 |
| 66  | 97         | 99 | 98 | 97         | 99 | 98 | 93         | 99 | 96 | 96             | 98 | 97 | 95 |
| 67  | 98         | 99 | 99 | 97         | 99 | 98 | 95         | 99 | 97 | 97             | 98 | 98 | 96 |
| 68  | 99         | 99 | 99 | 99         | 99 | 99 | 96         | 99 | 98 | 98             | 99 | 99 | 97 |
| 69  | 99         | 99 | 99 | 99         | 99 | 99 | 97         | 99 | 98 | 98             | 99 | 99 | 98 |
| 70  | 99         | 99 | 99 | 99         | 99 | 99 | 97         | 99 | 98 | 98             | 99 | 99 | 98 |
| 71  | 99         | 99 | 99 | 99         | 99 | 99 | 98         | 99 | 99 | 98             | 99 | 99 | 99 |
| 72  | 99         | 99 | 99 | 99         | 99 | 99 | 99         | 99 | 99 | 99             | 99 | 99 | 99 |

**Table A-2. Male (M), Female (F), Combined-Gender (C), and Youth Population (YP) Norms for the ASVAB Subtest Arithmetic Reasoning (AR)**

| <u>SSS</u> | <u>10th grade</u> |          |          | <u>11th grade</u> |          |          | <u>12th grade</u> |          |          | <u>Post Secondary</u> |          |          | <u>YP</u> |
|------------|-------------------|----------|----------|-------------------|----------|----------|-------------------|----------|----------|-----------------------|----------|----------|-----------|
|            | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>              | <u>F</u> | <u>C</u> |           |
| 17         | 1                 | 1        | 1        | 1                 | 1        | 1        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 18         | 2                 | 1        | 2        | 1                 | 2        | 1        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 19         | 2                 | 1        | 2        | 1                 | 2        | 2        | 2                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 20         | 3                 | 2        | 2        | 2                 | 2        | 2        | 2                 | 1        | 2        | 1                     | 1        | 1        | 1         |
| 21         | 3                 | 2        | 3        | 2                 | 3        | 2        | 3                 | 1        | 2        | 1                     | 1        | 1        | 1         |
| 22         | 4                 | 2        | 3        | 3                 | 3        | 3        | 3                 | 2        | 2        | 1                     | 1        | 1        | 1         |
| 23         | 5                 | 3        | 4        | 3                 | 3        | 3        | 4                 | 2        | 3        | 1                     | 1        | 1        | 2         |
| 24         | 6                 | 3        | 4        | 3                 | 4        | 4        | 4                 | 2        | 3        | 1                     | 1        | 1        | 2         |
| 25         | 6                 | 3        | 5        | 4                 | 4        | 4        | 4                 | 2        | 3        | 1                     | 1        | 1        | 2         |
| 26         | 7                 | 4        | 6        | 4                 | 5        | 4        | 5                 | 2        | 4        | 1                     | 1        | 1        | 2         |
| 27         | 8                 | 5        | 7        | 5                 | 5        | 5        | 6                 | 3        | 4        | 1                     | 1        | 1        | 3         |
| 28         | 8                 | 6        | 7        | 5                 | 6        | 5        | 6                 | 4        | 5        | 1                     | 1        | 1        | 3         |
| 29         | 9                 | 7        | 8        | 5                 | 6        | 6        | 7                 | 4        | 5        | 1                     | 1        | 1        | 3         |
| 30         | 10                | 8        | 9        | 6                 | 7        | 7        | 7                 | 5        | 6        | 2                     | 1        | 1        | 4         |
| 31         | 11                | 9        | 10       | 6                 | 8        | 7        | 7                 | 5        | 6        | 2                     | 1        | 1        | 4         |
| 32         | 13                | 10       | 11       | 7                 | 9        | 8        | 8                 | 6        | 7        | 2                     | 1        | 2        | 5         |
| 33         | 14                | 11       | 12       | 8                 | 10       | 9        | 9                 | 7        | 8        | 3                     | 2        | 2        | 5         |
| 34         | 15                | 12       | 13       | 9                 | 11       | 10       | 9                 | 8        | 9        | 3                     | 2        | 3        | 6         |
| 35         | 16                | 14       | 15       | 11                | 13       | 12       | 10                | 9        | 10       | 4                     | 4        | 4        | 7         |
| 36         | 18                | 17       | 17       | 12                | 13       | 13       | 11                | 10       | 10       | 5                     | 4        | 4        | 8         |
| 37         | 21                | 19       | 20       | 13                | 15       | 14       | 12                | 12       | 12       | 5                     | 5        | 5        | 9         |
| 38         | 22                | 22       | 22       | 14                | 18       | 16       | 13                | 13       | 13       | 6                     | 6        | 6        | 11        |
| 39         | 25                | 26       | 25       | 16                | 19       | 18       | 14                | 16       | 15       | 6                     | 9        | 8        | 13        |
| 40         | 28                | 29       | 29       | 18                | 21       | 20       | 15                | 19       | 17       | 8                     | 11       | 10       | 15        |
| 41         | 31                | 31       | 31       | 21                | 25       | 23       | 17                | 22       | 19       | 9                     | 13       | 11       | 17        |
| 42         | 33                | 36       | 35       | 24                | 28       | 26       | 20                | 25       | 23       | 11                    | 16       | 14       | 20        |
| 43         | 37                | 41       | 39       | 26                | 32       | 29       | 22                | 30       | 26       | 13                    | 21       | 17       | 23        |
| 44         | 41                | 46       | 43       | 30                | 36       | 33       | 24                | 34       | 29       | 16                    | 24       | 20       | 26        |
| 45         | 45                | 49       | 47       | 34                | 41       | 38       | 27                | 39       | 33       | 20                    | 28       | 24       | 29        |
| 46         | 50                | 54       | 52       | 39                | 44       | 42       | 30                | 43       | 37       | 23                    | 32       | 28       | 33        |
| 47         | 55                | 60       | 57       | 43                | 50       | 46       | 33                | 49       | 41       | 26                    | 37       | 32       | 37        |
| 48         | 58                | 66       | 62       | 48                | 54       | 51       | 36                | 55       | 46       | 30                    | 43       | 37       | 42        |
| 49         | 63                | 71       | 67       | 54                | 58       | 56       | 41                | 62       | 51       | 34                    | 48       | 42       | 47        |
| 50         | 67                | 75       | 71       | 60                | 64       | 62       | 46                | 67       | 57       | 39                    | 54       | 47       | 51        |
| 51         | 70                | 79       | 74       | 65                | 68       | 67       | 52                | 70       | 61       | 44                    | 61       | 53       | 56        |
| 52         | 74                | 82       | 78       | 68                | 73       | 71       | 57                | 74       | 65       | 50                    | 65       | 58       | 60        |
| 53         | 76                | 84       | 80       | 70                | 76       | 73       | 62                | 76       | 69       | 56                    | 69       | 63       | 64        |
| 54         | 79                | 86       | 83       | 73                | 78       | 75       | 64                | 79       | 71       | 61                    | 74       | 68       | 68        |
| 55         | 82                | 88       | 85       | 75                | 80       | 77       | 69                | 80       | 74       | 67                    | 79       | 73       | 72        |
| 56         | 85                | 90       | 87       | 77                | 81       | 79       | 71                | 82       | 77       | 72                    | 82       | 77       | 76        |
| 57         | 88                | 91       | 89       | 79                | 83       | 81       | 75                | 84       | 79       | 75                    | 86       | 81       | 78        |
| 58         | 89                | 93       | 91       | 82                | 85       | 84       | 76                | 87       | 81       | 78                    | 88       | 83       | 81        |
| 59         | 90                | 94       | 92       | 84                | 87       | 85       | 79                | 88       | 83       | 81                    | 90       | 86       | 83        |
| 60         | 92                | 95       | 93       | 86                | 89       | 88       | 81                | 90       | 85       | 84                    | 92       | 88       | 85        |
| 61         | 94                | 96       | 95       | 88                | 92       | 90       | 84                | 92       | 88       | 87                    | 93       | 90       | 88        |
| 62         | 96                | 98       | 97       | 90                | 93       | 92       | 86                | 93       | 89       | 89                    | 94       | 91       | 90        |
| 63         | 96                | 98       | 97       | 92                | 95       | 94       | 87                | 95       | 91       | 91                    | 96       | 93       | 91        |
| 64         | 97                | 99       | 98       | 94                | 97       | 95       | 91                | 96       | 93       | 93                    | 97       | 95       | 93        |
| 65         | 98                | 99       | 99       | 95                | 98       | 97       | 93                | 98       | 96       | 95                    | 98       | 96       | 95        |
| 66         | 99                | 99       | 99       | 96                | 99       | 98       | 95                | 99       | 97       | 97                    | 98       | 98       | 96        |
| 67         | 99                | 99       | 99       | 97                | 99       | 98       | 96                | 99       | 98       | 98                    | 99       | 99       | 97        |
| 68         | 99                | 99       | 99       | 97                | 99       | 99       | 97                | 99       | 98       | 99                    | 99       | 99       | 98        |
| 69         | 99                | 99       | 99       | 99                | 99       | 99       | 98                | 99       | 99       | 99                    | 99       | 99       | 98        |
| 70         | 99                | 99       | 99       | 99                | 99       | 99       | 99                | 99       | 99       | 99                    | 99       | 99       | 99        |

**Table A-3. Male (M), Female (F), Combined-Gender (C), and Youth Population (YP) Norms for the ASVAB Subtest Word Knowledge (WK)**

| <u>SSS</u> | <u>10th grade</u> |          |          | <u>11th grade</u> |          |          | <u>12th grade</u> |          |          | <u>Post Secondary</u> |          |          | <u>YP</u> |
|------------|-------------------|----------|----------|-------------------|----------|----------|-------------------|----------|----------|-----------------------|----------|----------|-----------|
|            | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>              | <u>F</u> | <u>C</u> |           |
| 19         | 1                 | 1        | 1        | 1                 | 1        | 1        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 20         | 2                 | 1        | 1        | 1                 | 2        | 1        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 21         | 2                 | 1        | 2        | 1                 | 2        | 1        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 22         | 3                 | 2        | 2        | 2                 | 2        | 2        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 23         | 4                 | 2        | 3        | 2                 | 2        | 2        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 24         | 4                 | 3        | 3        | 2                 | 2        | 2        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 25         | 4                 | 4        | 4        | 2                 | 3        | 3        | 2                 | 1        | 2        | 1                     | 1        | 1        | 2         |
| 26         | 6                 | 4        | 5        | 2                 | 4        | 3        | 2                 | 2        | 2        | 1                     | 1        | 1        | 2         |
| 27         | 7                 | 5        | 6        | 3                 | 4        | 4        | 3                 | 2        | 2        | 2                     | 1        | 2        | 2         |
| 28         | 7                 | 7        | 7        | 4                 | 5        | 4        | 3                 | 3        | 3        | 2                     | 2        | 2        | 3         |
| 29         | 9                 | 7        | 8        | 5                 | 6        | 5        | 3                 | 4        | 3        | 2                     | 2        | 2        | 3         |
| 30         | 11                | 8        | 9        | 6                 | 6        | 6        | 3                 | 4        | 4        | 3                     | 3        | 3        | 4         |
| 31         | 13                | 10       | 11       | 7                 | 8        | 7        | 5                 | 5        | 5        | 3                     | 3        | 3        | 4         |
| 32         | 14                | 11       | 13       | 7                 | 9        | 8        | 6                 | 6        | 6        | 3                     | 3        | 3        | 5         |
| 33         | 16                | 14       | 15       | 9                 | 10       | 10       | 8                 | 7        | 7        | 3                     | 4        | 4        | 5         |
| 34         | 18                | 16       | 17       | 10                | 13       | 11       | 8                 | 8        | 8        | 4                     | 4        | 4        | 6         |
| 35         | 21                | 19       | 20       | 13                | 15       | 14       | 9                 | 10       | 10       | 5                     | 5        | 5        | 7         |
| 36         | 24                | 23       | 24       | 15                | 17       | 16       | 11                | 12       | 11       | 5                     | 7        | 6        | 9         |
| 37         | 27                | 26       | 26       | 18                | 20       | 19       | 12                | 14       | 13       | 6                     | 8        | 7        | 10        |
| 38         | 30                | 29       | 29       | 22                | 23       | 23       | 14                | 18       | 16       | 8                     | 9        | 9        | 12        |
| 39         | 32                | 32       | 32       | 24                | 25       | 25       | 16                | 20       | 18       | 11                    | 10       | 11       | 14        |
| 40         | 35                | 35       | 35       | 26                | 29       | 28       | 19                | 23       | 21       | 12                    | 12       | 12       | 16        |
| 41         | 38                | 40       | 39       | 30                | 32       | 31       | 22                | 27       | 24       | 14                    | 16       | 15       | 19        |
| 42         | 42                | 44       | 43       | 33                | 36       | 34       | 24                | 31       | 28       | 17                    | 18       | 17       | 22        |
| 43         | 47                | 47       | 47       | 35                | 40       | 37       | 27                | 35       | 31       | 19                    | 21       | 20       | 25        |
| 44         | 50                | 50       | 50       | 39                | 43       | 41       | 31                | 37       | 34       | 21                    | 23       | 22       | 28        |
| 45         | 53                | 55       | 54       | 40                | 48       | 44       | 34                | 43       | 38       | 24                    | 28       | 26       | 31        |
| 46         | 57                | 61       | 59       | 46                | 51       | 48       | 37                | 48       | 42       | 29                    | 33       | 31       | 34        |
| 47         | 61                | 64       | 63       | 51                | 55       | 53       | 41                | 50       | 45       | 32                    | 39       | 36       | 38        |
| 48         | 67                | 69       | 68       | 55                | 59       | 57       | 46                | 55       | 50       | 37                    | 43       | 41       | 43        |
| 49         | 71                | 73       | 72       | 61                | 64       | 62       | 50                | 59       | 55       | 43                    | 48       | 46       | 46        |
| 50         | 75                | 78       | 77       | 66                | 69       | 67       | 55                | 66       | 60       | 46                    | 51       | 49       | 50        |
| 51         | 79                | 82       | 81       | 71                | 71       | 71       | 59                | 70       | 65       | 50                    | 55       | 52       | 54        |
| 52         | 83                | 85       | 84       | 77                | 77       | 77       | 65                | 75       | 70       | 54                    | 58       | 56       | 57        |
| 53         | 87                | 88       | 88       | 80                | 81       | 81       | 71                | 80       | 76       | 59                    | 62       | 61       | 62        |
| 54         | 90                | 91       | 90       | 84                | 84       | 84       | 75                | 83       | 79       | 64                    | 67       | 66       | 66        |
| 55         | 92                | 92       | 92       | 87                | 88       | 87       | 79                | 86       | 83       | 69                    | 72       | 71       | 70        |
| 56         | 94                | 94       | 94       | 89                | 90       | 89       | 82                | 90       | 86       | 75                    | 75       | 75       | 74        |
| 57         | 95                | 96       | 95       | 92                | 91       | 92       | 85                | 92       | 88       | 80                    | 81       | 80       | 77        |
| 58         | 97                | 97       | 97       | 93                | 92       | 93       | 87                | 93       | 90       | 84                    | 84       | 84       | 81        |
| 59         | 97                | 97       | 97       | 95                | 94       | 95       | 90                | 95       | 92       | 87                    | 86       | 87       | 84        |
| 60         | 97                | 98       | 98       | 96                | 95       | 95       | 92                | 96       | 94       | 89                    | 88       | 89       | 86        |
| 61         | 98                | 98       | 98       | 96                | 96       | 96       | 94                | 97       | 95       | 91                    | 90       | 91       | 89        |
| 62         | 98                | 99       | 99       | 97                | 96       | 97       | 95                | 98       | 96       | 93                    | 93       | 93       | 91        |
| 63         | 98                | 99       | 99       | 98                | 96       | 97       | 96                | 98       | 97       | 95                    | 94       | 94       | 92        |
| 64         | 99                | 99       | 99       | 99                | 97       | 98       | 97                | 98       | 98       | 97                    | 94       | 95       | 94        |
| 65         | 99                | 99       | 99       | 99                | 98       | 98       | 98                | 99       | 99       | 98                    | 95       | 96       | 95        |
| 66         | 99                | 99       | 99       | 99                | 98       | 99       | 98                | 99       | 99       | 98                    | 97       | 97       | 96        |
| 67         | 99                | 99       | 99       | 99                | 99       | 99       | 99                | 99       | 99       | 98                    | 97       | 98       | 97        |
| 68         | 99                | 99       | 99       | 99                | 99       | 99       | 99                | 99       | 99       | 99                    | 98       | 99       | 98        |
| 69         | 99                | 99       | 99       | 99                | 99       | 99       | 99                | 99       | 99       | 99                    | 99       | 99       | 98        |
| 70         | 99                | 99       | 99       | 99                | 99       | 99       | 99                | 99       | 99       | 99                    | 99       | 99       | 98        |
| 71         | 99                | 99       | 99       | 99                | 99       | 99       | 99                | 99       | 99       | 99                    | 99       | 99       | 99        |

**Table A-4. Male (M), Female (F), Combined-Gender (C), and Youth Population (YP) Norms for the ASVAB Subtest Paragraph Comprehension (PC)**

| <u>SSS</u> | <u>10th grade</u> |          |          | <u>11th grade</u> |          |          | <u>12th grade</u> |          |          | <u>Post Secondary</u> |          |          | <u>YP</u> |
|------------|-------------------|----------|----------|-------------------|----------|----------|-------------------|----------|----------|-----------------------|----------|----------|-----------|
|            | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>              | <u>F</u> | <u>C</u> |           |
| 18         | 1                 | 1        | 1        | 1                 | 1        | 1        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 19         | 2                 | 1        | 1        | 1                 | 1        | 1        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 20         | 3                 | 1        | 2        | 1                 | 1        | 1        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 21         | 4                 | 2        | 3        | 2                 | 1        | 1        | 2                 | 1        | 2        | 1                     | 1        | 1        | 1         |
| 22         | 5                 | 3        | 4        | 2                 | 1        | 2        | 3                 | 2        | 2        | 1                     | 1        | 1        | 1         |
| 23         | 7                 | 3        | 5        | 4                 | 3        | 3        | 4                 | 2        | 3        | 1                     | 1        | 1        | 2         |
| 24         | 8                 | 4        | 6        | 5                 | 5        | 5        | 5                 | 2        | 4        | 1                     | 1        | 1        | 2         |
| 25         | 9                 | 5        | 7        | 6                 | 5        | 5        | 6                 | 2        | 4        | 1                     | 1        | 1        | 2         |
| 26         | 10                | 5        | 8        | 7                 | 5        | 6        | 6                 | 3        | 4        | 2                     | 1        | 2        | 3         |
| 27         | 12                | 7        | 10       | 8                 | 6        | 7        | 7                 | 3        | 5        | 3                     | 1        | 2        | 4         |
| 28         | 14                | 8        | 11       | 9                 | 6        | 8        | 8                 | 4        | 6        | 3                     | 1        | 2        | 4         |
| 29         | 16                | 9        | 13       | 11                | 7        | 9        | 8                 | 4        | 6        | 4                     | 2        | 3        | 5         |
| 30         | 19                | 10       | 14       | 12                | 8        | 10       | 10                | 5        | 7        | 4                     | 2        | 3        | 5         |
| 31         | 20                | 11       | 16       | 13                | 9        | 11       | 10                | 6        | 8        | 5                     | 2        | 4        | 6         |
| 32         | 23                | 12       | 18       | 15                | 10       | 13       | 11                | 7        | 9        | 6                     | 2        | 4        | 7         |
| 33         | 24                | 14       | 19       | 17                | 11       | 14       | 12                | 8        | 10       | 6                     | 3        | 4        | 7         |
| 34         | 26                | 17       | 21       | 18                | 12       | 15       | 14                | 9        | 11       | 7                     | 4        | 5        | 8         |
| 35         | 28                | 18       | 23       | 20                | 14       | 17       | 15                | 10       | 12       | 8                     | 5        | 6        | 9         |
| 36         | 31                | 20       | 25       | 21                | 16       | 19       | 16                | 11       | 14       | 8                     | 6        | 7        | 10        |
| 37         | 34                | 22       | 28       | 24                | 18       | 21       | 17                | 13       | 15       | 10                    | 8        | 9        | 11        |
| 38         | 37                | 24       | 31       | 25                | 19       | 22       | 18                | 16       | 17       | 11                    | 8        | 10       | 13        |
| 39         | 40                | 26       | 33       | 27                | 22       | 25       | 20                | 17       | 19       | 12                    | 9        | 11       | 14        |
| 40         | 42                | 29       | 35       | 29                | 23       | 26       | 23                | 20       | 21       | 15                    | 11       | 13       | 16        |
| 41         | 45                | 32       | 39       | 31                | 26       | 29       | 25                | 23       | 24       | 16                    | 13       | 14       | 18        |
| 42         | 48                | 34       | 41       | 33                | 29       | 31       | 28                | 26       | 27       | 18                    | 14       | 16       | 20        |
| 43         | 51                | 38       | 44       | 37                | 32       | 34       | 30                | 29       | 29       | 21                    | 17       | 19       | 23        |
| 44         | 52                | 42       | 47       | 42                | 36       | 39       | 34                | 33       | 33       | 24                    | 20       | 22       | 26        |
| 45         | 55                | 46       | 51       | 45                | 39       | 42       | 38                | 35       | 36       | 25                    | 23       | 24       | 29        |
| 46         | 57                | 50       | 54       | 47                | 42       | 45       | 40                | 38       | 39       | 29                    | 25       | 27       | 31        |
| 47         | 60                | 54       | 57       | 50                | 45       | 48       | 43                | 42       | 42       | 34                    | 28       | 30       | 35        |
| 48         | 62                | 57       | 60       | 54                | 49       | 52       | 46                | 46       | 46       | 36                    | 31       | 34       | 38        |
| 49         | 66                | 62       | 64       | 57                | 52       | 55       | 49                | 49       | 49       | 38                    | 35       | 37       | 41        |
| 50         | 70                | 65       | 68       | 60                | 57       | 59       | 53                | 53       | 53       | 41                    | 39       | 40       | 45        |
| 51         | 73                | 69       | 71       | 63                | 60       | 62       | 57                | 58       | 58       | 46                    | 43       | 45       | 49        |
| 52         | 77                | 72       | 74       | 67                | 66       | 66       | 61                | 62       | 61       | 52                    | 50       | 51       | 54        |
| 53         | 80                | 76       | 78       | 71                | 68       | 69       | 64                | 67       | 65       | 59                    | 57       | 58       | 58        |
| 54         | 84                | 79       | 82       | 76                | 73       | 75       | 68                | 72       | 70       | 63                    | 63       | 63       | 63        |
| 55         | 87                | 84       | 85       | 82                | 77       | 79       | 72                | 76       | 74       | 69                    | 69       | 69       | 68        |
| 56         | 90                | 87       | 88       | 86                | 79       | 82       | 76                | 80       | 78       | 75                    | 74       | 74       | 73        |
| 57         | 92                | 90       | 91       | 89                | 85       | 87       | 81                | 84       | 83       | 80                    | 78       | 79       | 77        |
| 58         | 94                | 92       | 93       | 90                | 87       | 89       | 83                | 87       | 85       | 83                    | 82       | 82       | 81        |
| 59         | 95                | 94       | 95       | 93                | 91       | 92       | 87                | 89       | 88       | 89                    | 86       | 87       | 85        |
| 60         | 96                | 94       | 95       | 95                | 93       | 94       | 91                | 92       | 91       | 92                    | 89       | 90       | 88        |
| 61         | 97                | 95       | 96       | 95                | 93       | 94       | 92                | 93       | 93       | 93                    | 91       | 92       | 89        |
| 62         | 98                | 96       | 97       | 97                | 94       | 96       | 94                | 96       | 95       | 95                    | 93       | 94       | 92        |
| 63         | 99                | 97       | 98       | 98                | 97       | 97       | 97                | 98       | 97       | 97                    | 95       | 96       | 95        |
| 64         | 99                | 98       | 98       | 98                | 98       | 98       | 98                | 99       | 98       | 98                    | 97       | 97       | 96        |
| 65         | 99                | 99       | 99       | 99                | 98       | 98       | 98                | 99       | 99       | 98                    | 97       | 98       | 97        |
| 66         | 99                | 99       | 99       | 99                | 98       | 98       | 98                | 99       | 99       | 98                    | 97       | 98       | 97        |
| 67         | 99                | 99       | 99       | 99                | 99       | 99       | 99                | 99       | 99       | 99                    | 98       | 98       | 98        |
| 68         | 99                | 99       | 99       | 99                | 99       | 99       | 99                | 99       | 99       | 99                    | 99       | 99       | 99        |

**Table A-5. Male (M), Female (F), Combined-Gender (C), and Youth Population (YP) Norms for the ASVAB Subtest Math Knowledge (MK)**

| <u>SSS</u> | <u>10th grade</u> |          |          | <u>11th grade</u> |          |          | <u>12th grade</u> |          |          | <u>Post Secondary</u> |          |          | <u>YP</u> |
|------------|-------------------|----------|----------|-------------------|----------|----------|-------------------|----------|----------|-----------------------|----------|----------|-----------|
|            | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>              | <u>F</u> | <u>C</u> |           |
| 23         | 1                 | 1        | 1        | 1                 | 1        | 1        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 24         | 2                 | 1        | 1        | 2                 | 1        | 1        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 25         | 2                 | 1        | 2        | 2                 | 1        | 1        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 26         | 3                 | 1        | 2        | 3                 | 1        | 2        | 2                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 27         | 3                 | 2        | 2        | 3                 | 2        | 3        | 2                 | 1        | 2        | 1                     | 1        | 1        | 1         |
| 28         | 4                 | 2        | 3        | 4                 | 2        | 3        | 3                 | 2        | 2        | 1                     | 1        | 1        | 2         |
| 29         | 5                 | 2        | 4        | 4                 | 3        | 3        | 3                 | 3        | 3        | 1                     | 1        | 1        | 2         |
| 30         | 5                 | 3        | 4        | 4                 | 3        | 4        | 4                 | 3        | 3        | 1                     | 1        | 1        | 3         |
| 31         | 7                 | 4        | 5        | 4                 | 3        | 4        | 4                 | 4        | 4        | 1                     | 1        | 1        | 4         |
| 32         | 8                 | 5        | 7        | 5                 | 4        | 4        | 4                 | 4        | 4        | 2                     | 2        | 2        | 4         |
| 33         | 9                 | 6        | 8        | 6                 | 4        | 5        | 4                 | 5        | 5        | 2                     | 2        | 2        | 5         |
| 34         | 11                | 7        | 9        | 8                 | 6        | 7        | 4                 | 6        | 5        | 2                     | 2        | 2        | 7         |
| 35         | 13                | 10       | 12       | 9                 | 7        | 8        | 5                 | 8        | 7        | 3                     | 2        | 2        | 8         |
| 36         | 15                | 11       | 13       | 11                | 8        | 9        | 6                 | 9        | 8        | 4                     | 3        | 3        | 10        |
| 37         | 18                | 12       | 15       | 12                | 9        | 11       | 7                 | 11       | 9        | 4                     | 4        | 4        | 11        |
| 38         | 21                | 14       | 18       | 13                | 11       | 12       | 9                 | 12       | 11       | 5                     | 5        | 5        | 13        |
| 39         | 24                | 17       | 21       | 15                | 12       | 14       | 12                | 14       | 13       | 7                     | 6        | 7        | 15        |
| 40         | 28                | 20       | 24       | 17                | 15       | 16       | 13                | 16       | 14       | 9                     | 8        | 9        | 18        |
| 41         | 31                | 24       | 28       | 19                | 16       | 18       | 14                | 19       | 16       | 11                    | 11       | 11       | 21        |
| 42         | 33                | 28       | 30       | 21                | 19       | 20       | 15                | 21       | 18       | 14                    | 13       | 13       | 24        |
| 43         | 36                | 31       | 33       | 24                | 23       | 23       | 17                | 24       | 20       | 16                    | 16       | 16       | 27        |
| 44         | 39                | 34       | 37       | 26                | 26       | 26       | 20                | 27       | 24       | 18                    | 20       | 19       | 30        |
| 45         | 43                | 37       | 40       | 29                | 29       | 29       | 24                | 29       | 26       | 21                    | 24       | 23       | 35        |
| 46         | 46                | 40       | 43       | 33                | 32       | 33       | 26                | 32       | 29       | 26                    | 27       | 27       | 38        |
| 47         | 51                | 44       | 48       | 38                | 35       | 37       | 28                | 35       | 32       | 31                    | 31       | 31       | 41        |
| 48         | 56                | 49       | 52       | 42                | 38       | 40       | 32                | 39       | 35       | 34                    | 34       | 34       | 44        |
| 49         | 61                | 52       | 57       | 47                | 42       | 45       | 36                | 43       | 39       | 37                    | 37       | 37       | 47        |
| 50         | 64                | 56       | 60       | 51                | 45       | 48       | 40                | 48       | 44       | 41                    | 43       | 42       | 50        |
| 51         | 68                | 60       | 64       | 55                | 49       | 52       | 45                | 51       | 48       | 46                    | 48       | 47       | 54        |
| 52         | 73                | 64       | 69       | 59                | 52       | 56       | 49                | 54       | 51       | 52                    | 51       | 52       | 57        |
| 53         | 75                | 69       | 72       | 64                | 59       | 61       | 53                | 57       | 55       | 55                    | 56       | 55       | 60        |
| 54         | 80                | 75       | 77       | 68                | 62       | 65       | 59                | 61       | 60       | 60                    | 59       | 59       | 63        |
| 55         | 82                | 78       | 80       | 71                | 66       | 68       | 63                | 65       | 64       | 65                    | 65       | 65       | 67        |
| 56         | 85                | 83       | 84       | 74                | 71       | 72       | 66                | 69       | 68       | 70                    | 70       | 70       | 69        |
| 57         | 86                | 86       | 86       | 77                | 74       | 75       | 69                | 72       | 71       | 73                    | 76       | 74       | 73        |
| 58         | 89                | 89       | 89       | 80                | 77       | 79       | 71                | 75       | 73       | 77                    | 80       | 78       | 77        |
| 59         | 91                | 91       | 91       | 83                | 82       | 83       | 74                | 80       | 77       | 82                    | 84       | 83       | 81        |
| 60         | 93                | 94       | 94       | 87                | 85       | 86       | 79                | 83       | 81       | 85                    | 89       | 87       | 84        |
| 61         | 96                | 96       | 96       | 89                | 87       | 88       | 83                | 86       | 84       | 90                    | 92       | 91       | 88        |
| 62         | 97                | 97       | 97       | 91                | 91       | 91       | 85                | 90       | 88       | 91                    | 94       | 93       | 91        |
| 63         | 98                | 98       | 98       | 94                | 94       | 94       | 89                | 92       | 90       | 94                    | 96       | 95       | 93        |
| 64         | 98                | 98       | 98       | 96                | 96       | 96       | 91                | 93       | 92       | 95                    | 97       | 96       | 94        |
| 65         | 98                | 99       | 99       | 97                | 97       | 97       | 93                | 96       | 95       | 97                    | 99       | 98       | 96        |
| 66         | 99                | 99       | 99       | 98                | 98       | 98       | 95                | 97       | 96       | 98                    | 99       | 99       | 97        |
| 67         | 99                | 99       | 99       | 98                | 99       | 98       | 96                | 99       | 98       | 98                    | 99       | 99       | 98        |
| 68         | 99                | 99       | 99       | 99                | 99       | 99       | 98                | 99       | 99       | 99                    | 99       | 99       | 98        |
| 69         | 99                | 99       | 99       | 99                | 99       | 99       | 98                | 99       | 99       | 99                    | 99       | 99       | 99        |
| 70         | 99                | 99       | 99       | 99                | 99       | 99       | 99                | 99       | 99       | 99                    | 99       | 99       | 99        |

**Table A-6. Male (M), Female (F), Combined-Gender (C), and Youth Population (YP) Norms for the ASVAB Subtest Electronics Information (EI)**

| <u>SSS</u> | <u>10th grade</u> |          |          | <u>11th grade</u> |          |          | <u>12th grade</u> |          |          | <u>Post Secondary</u> |          |          | <u>YP</u> |
|------------|-------------------|----------|----------|-------------------|----------|----------|-------------------|----------|----------|-----------------------|----------|----------|-----------|
|            | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>              | <u>F</u> | <u>C</u> |           |
| 22         | 1                 | 1        | 1        | 1                 | 1        | 1        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 23         | 2                 | 1        | 1        | 1                 | 1        | 1        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 24         | 2                 | 1        | 2        | 1                 | 2        | 1        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 25         | 4                 | 2        | 3        | 1                 | 2        | 2        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 26         | 6                 | 3        | 4        | 2                 | 3        | 2        | 2                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 27         | 6                 | 4        | 5        | 2                 | 3        | 3        | 2                 | 2        | 2        | 1                     | 1        | 1        | 1         |
| 28         | 7                 | 5        | 6        | 3                 | 4        | 3        | 3                 | 2        | 2        | 1                     | 1        | 1        | 2         |
| 29         | 8                 | 7        | 8        | 4                 | 5        | 4        | 3                 | 3        | 3        | 1                     | 1        | 1        | 2         |
| 30         | 10                | 8        | 9        | 5                 | 6        | 5        | 4                 | 3        | 3        | 1                     | 2        | 1        | 2         |
| 31         | 11                | 9        | 10       | 5                 | 8        | 7        | 5                 | 5        | 5        | 1                     | 3        | 2        | 3         |
| 32         | 13                | 10       | 12       | 7                 | 9        | 8        | 7                 | 6        | 6        | 1                     | 4        | 3        | 4         |
| 33         | 14                | 13       | 13       | 7                 | 10       | 9        | 8                 | 7        | 7        | 2                     | 5        | 3        | 5         |
| 34         | 15                | 15       | 15       | 9                 | 13       | 11       | 9                 | 8        | 8        | 2                     | 6        | 4        | 6         |
| 35         | 18                | 18       | 18       | 10                | 16       | 13       | 9                 | 10       | 10       | 2                     | 7        | 5        | 7         |
| 36         | 20                | 21       | 21       | 12                | 18       | 15       | 10                | 13       | 11       | 3                     | 9        | 6        | 8         |
| 37         | 22                | 26       | 24       | 13                | 21       | 17       | 11                | 15       | 13       | 3                     | 10       | 7        | 9         |
| 38         | 25                | 30       | 27       | 17                | 24       | 20       | 12                | 20       | 16       | 4                     | 12       | 8        | 11        |
| 39         | 28                | 34       | 31       | 19                | 29       | 24       | 13                | 25       | 19       | 5                     | 15       | 10       | 13        |
| 40         | 31                | 39       | 35       | 21                | 34       | 28       | 15                | 29       | 22       | 6                     | 18       | 12       | 16        |
| 41         | 34                | 45       | 39       | 23                | 40       | 32       | 16                | 34       | 25       | 7                     | 23       | 15       | 19        |
| 42         | 36                | 51       | 43       | 27                | 47       | 37       | 18                | 40       | 29       | 8                     | 26       | 18       | 21        |
| 43         | 40                | 56       | 48       | 31                | 52       | 41       | 20                | 47       | 34       | 10                    | 31       | 21       | 24        |
| 44         | 45                | 61       | 53       | 34                | 57       | 45       | 23                | 52       | 37       | 13                    | 36       | 25       | 28        |
| 45         | 49                | 68       | 59       | 38                | 62       | 50       | 26                | 57       | 41       | 15                    | 41       | 29       | 32        |
| 46         | 53                | 73       | 63       | 41                | 68       | 54       | 30                | 63       | 46       | 17                    | 48       | 34       | 35        |
| 47         | 57                | 79       | 68       | 47                | 72       | 60       | 34                | 67       | 50       | 20                    | 53       | 38       | 39        |
| 48         | 60                | 83       | 71       | 53                | 79       | 66       | 38                | 74       | 56       | 26                    | 58       | 43       | 44        |
| 49         | 65                | 87       | 76       | 59                | 83       | 70       | 43                | 79       | 61       | 28                    | 69       | 50       | 49        |
| 50         | 69                | 90       | 79       | 64                | 88       | 76       | 49                | 85       | 67       | 32                    | 75       | 55       | 54        |
| 51         | 74                | 92       | 83       | 67                | 91       | 79       | 54                | 90       | 72       | 36                    | 80       | 59       | 59        |
| 52         | 77                | 93       | 85       | 70                | 93       | 81       | 58                | 92       | 75       | 40                    | 85       | 63       | 64        |
| 53         | 80                | 94       | 87       | 74                | 95       | 84       | 62                | 94       | 78       | 44                    | 87       | 67       | 68        |
| 54         | 82                | 95       | 89       | 77                | 96       | 86       | 66                | 95       | 80       | 48                    | 89       | 70       | 71        |
| 55         | 84                | 96       | 90       | 79                | 97       | 88       | 69                | 96       | 82       | 53                    | 91       | 73       | 74        |
| 56         | 86                | 97       | 91       | 82                | 97       | 89       | 73                | 96       | 85       | 58                    | 93       | 76       | 77        |
| 57         | 88                | 98       | 93       | 85                | 97       | 91       | 75                | 97       | 86       | 62                    | 95       | 79       | 79        |
| 58         | 89                | 98       | 93       | 87                | 98       | 92       | 78                | 98       | 88       | 65                    | 96       | 81       | 82        |
| 59         | 90                | 98       | 94       | 89                | 98       | 93       | 81                | 98       | 90       | 70                    | 97       | 84       | 84        |
| 60         | 92                | 99       | 95       | 91                | 98       | 95       | 84                | 98       | 91       | 73                    | 98       | 86       | 86        |
| 61         | 93                | 99       | 96       | 93                | 99       | 96       | 85                | 99       | 92       | 77                    | 99       | 88       | 88        |
| 62         | 94                | 99       | 96       | 93                | 99       | 96       | 87                | 99       | 93       | 79                    | 99       | 89       | 89        |
| 63         | 95                | 99       | 97       | 95                | 99       | 97       | 90                | 99       | 95       | 82                    | 99       | 91       | 91        |
| 64         | 96                | 99       | 98       | 96                | 99       | 98       | 91                | 99       | 95       | 86                    | 99       | 93       | 92        |
| 65         | 98                | 99       | 99       | 96                | 99       | 98       | 92                | 99       | 96       | 87                    | 99       | 93       | 93        |
| 66         | 98                | 99       | 99       | 96                | 99       | 98       | 93                | 99       | 96       | 89                    | 99       | 94       | 94        |
| 67         | 98                | 99       | 99       | 97                | 99       | 98       | 94                | 99       | 97       | 91                    | 99       | 95       | 95        |
| 68         | 99                | 99       | 99       | 97                | 99       | 98       | 94                | 99       | 97       | 92                    | 99       | 96       | 95        |
| 69         | 99                | 99       | 99       | 97                | 99       | 99       | 95                | 99       | 98       | 92                    | 99       | 96       | 96        |
| 70         | 99                | 99       | 99       | 98                | 99       | 99       | 96                | 99       | 98       | 93                    | 99       | 97       | 97        |
| 71         | 99                | 99       | 99       | 98                | 99       | 99       | 97                | 99       | 98       | 94                    | 99       | 97       | 97        |
| 72         | 99                | 99       | 99       | 99                | 99       | 99       | 98                | 99       | 99       | 96                    | 99       | 98       | 98        |
| 73         | 99                | 99       | 99       | 99                | 99       | 99       | 98                | 99       | 99       | 97                    | 99       | 98       | 98        |
| 74         | 99                | 99       | 99       | 99                | 99       | 99       | 99                | 99       | 99       | 97                    | 99       | 99       | 99        |
| 75         | 99                | 99       | 99       | 99                | 99       | 99       | 99                | 99       | 99       | 98                    | 99       | 99       | 99        |
| 76         | 99                | 99       | 99       | 99                | 99       | 99       | 99                | 99       | 99       | 98                    | 99       | 99       | 99        |
| 77         | 99                | 99       | 99       | 99                | 99       | 99       | 99                | 99       | 99       | 98                    | 99       | 99       | 99        |
| 78         | 99                | 99       | 99       | 99                | 99       | 99       | 99                | 99       | 99       | 98                    | 99       | 99       | 99        |
| 79         | 99                | 99       | 99       | 99                | 99       | 99       | 99                | 99       | 99       | 99                    | 99       | 99       | 99        |

**Table A-7. Male (M), Female (F), Combined-Gender (C), and Youth Population (YP) Norms for the ASVAB Subtest Auto and Shop Information (AS)**

| <u>SSS</u> | <u>10th grade</u> |          |          | <u>11th grade</u> |          |          | <u>12th grade</u> |          |          | <u>Post Secondary</u> |          |          | <u>YP</u> |
|------------|-------------------|----------|----------|-------------------|----------|----------|-------------------|----------|----------|-----------------------|----------|----------|-----------|
|            | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>              | <u>F</u> | <u>C</u> |           |
| 25         | 1                 | 1        | 1        | 1                 | 1        | 1        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 26         | 2                 | 2        | 2        | 1                 | 1        | 1        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 27         | 2                 | 3        | 2        | 1                 | 1        | 1        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 28         | 2                 | 4        | 3        | 1                 | 2        | 1        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 29         | 3                 | 5        | 4        | 2                 | 2        | 2        | 2                 | 2        | 2        | 1                     | 1        | 1        | 1         |
| 30         | 4                 | 6        | 5        | 2                 | 4        | 3        | 2                 | 3        | 2        | 1                     | 2        | 1        | 1         |
| 31         | 6                 | 7        | 6        | 3                 | 6        | 4        | 2                 | 3        | 3        | 1                     | 2        | 1        | 2         |
| 32         | 6                 | 10       | 8        | 4                 | 7        | 6        | 2                 | 5        | 4        | 1                     | 3        | 2        | 2         |
| 33         | 8                 | 12       | 10       | 5                 | 10       | 8        | 3                 | 8        | 5        | 1                     | 4        | 2        | 3         |
| 34         | 10                | 17       | 13       | 6                 | 13       | 10       | 4                 | 11       | 7        | 1                     | 5        | 3        | 4         |
| 35         | 12                | 21       | 16       | 7                 | 18       | 13       | 6                 | 13       | 9        | 1                     | 8        | 4        | 6         |
| 36         | 14                | 26       | 20       | 9                 | 22       | 15       | 7                 | 17       | 12       | 1                     | 11       | 6        | 7         |
| 37         | 17                | 31       | 24       | 11                | 26       | 19       | 9                 | 23       | 16       | 2                     | 14       | 8        | 9         |
| 38         | 20                | 37       | 28       | 13                | 31       | 22       | 11                | 28       | 20       | 3                     | 18       | 11       | 12        |
| 39         | 24                | 44       | 34       | 15                | 38       | 26       | 15                | 33       | 24       | 4                     | 21       | 13       | 14        |
| 40         | 26                | 52       | 39       | 20                | 45       | 32       | 17                | 40       | 28       | 5                     | 26       | 16       | 18        |
| 41         | 30                | 59       | 44       | 23                | 52       | 37       | 19                | 46       | 32       | 7                     | 32       | 20       | 20        |
| 42         | 33                | 66       | 49       | 26                | 59       | 42       | 21                | 53       | 37       | 9                     | 37       | 24       | 24        |
| 43         | 38                | 73       | 55       | 30                | 65       | 47       | 24                | 60       | 42       | 11                    | 41       | 27       | 27        |
| 44         | 44                | 78       | 61       | 35                | 71       | 53       | 27                | 66       | 46       | 13                    | 47       | 31       | 31        |
| 45         | 48                | 82       | 64       | 38                | 77       | 58       | 31                | 72       | 51       | 16                    | 51       | 35       | 35        |
| 46         | 54                | 85       | 69       | 43                | 81       | 61       | 35                | 77       | 56       | 20                    | 57       | 39       | 39        |
| 47         | 59                | 88       | 73       | 48                | 85       | 66       | 38                | 83       | 60       | 23                    | 61       | 43       | 43        |
| 48         | 63                | 92       | 77       | 51                | 89       | 70       | 42                | 85       | 63       | 28                    | 68       | 49       | 47        |
| 49         | 68                | 94       | 80       | 55                | 91       | 73       | 47                | 88       | 67       | 31                    | 72       | 53       | 51        |
| 50         | 71                | 96       | 83       | 59                | 93       | 76       | 53                | 91       | 72       | 34                    | 78       | 57       | 56        |
| 51         | 74                | 97       | 85       | 63                | 95       | 79       | 56                | 93       | 74       | 37                    | 81       | 60       | 59        |
| 52         | 76                | 98       | 87       | 68                | 96       | 82       | 60                | 97       | 78       | 41                    | 86       | 65       | 63        |
| 53         | 81                | 99       | 90       | 71                | 98       | 84       | 64                | 98       | 81       | 46                    | 89       | 69       | 66        |
| 54         | 84                | 99       | 91       | 74                | 98       | 86       | 68                | 98       | 83       | 49                    | 92       | 72       | 69        |
| 55         | 85                | 99       | 92       | 78                | 99       | 88       | 72                | 99       | 85       | 54                    | 94       | 75       | 72        |
| 56         | 88                | 99       | 93       | 81                | 99       | 90       | 76                | 99       | 87       | 57                    | 96       | 78       | 75        |
| 57         | 90                | 99       | 95       | 84                | 99       | 92       | 78                | 99       | 89       | 62                    | 97       | 80       | 78        |
| 58         | 91                | 99       | 95       | 86                | 99       | 93       | 81                | 99       | 91       | 66                    | 98       | 83       | 80        |
| 59         | 93                | 99       | 96       | 89                | 99       | 94       | 83                | 99       | 91       | 69                    | 99       | 84       | 82        |
| 60         | 94                | 99       | 97       | 90                | 99       | 95       | 86                | 99       | 93       | 71                    | 99       | 86       | 84        |
| 61         | 96                | 99       | 98       | 92                | 99       | 96       | 88                | 99       | 94       | 74                    | 99       | 87       | 86        |
| 62         | 97                | 99       | 98       | 93                | 99       | 96       | 89                | 99       | 95       | 76                    | 99       | 89       | 88        |
| 63         | 97                | 99       | 99       | 94                | 99       | 97       | 91                | 99       | 95       | 81                    | 99       | 91       | 90        |
| 64         | 98                | 99       | 99       | 96                | 99       | 98       | 92                | 99       | 96       | 84                    | 99       | 92       | 91        |
| 65         | 98                | 99       | 99       | 96                | 99       | 98       | 93                | 99       | 96       | 86                    | 99       | 93       | 93        |
| 66         | 98                | 99       | 99       | 98                | 99       | 99       | 94                | 99       | 97       | 89                    | 99       | 95       | 94        |
| 67         | 99                | 99       | 99       | 98                | 99       | 99       | 95                | 99       | 98       | 91                    | 99       | 96       | 95        |
| 68         | 99                | 99       | 99       | 99                | 99       | 99       | 96                | 99       | 98       | 92                    | 99       | 96       | 96        |
| 69         | 99                | 99       | 99       | 99                | 99       | 99       | 96                | 99       | 98       | 93                    | 99       | 97       | 96        |
| 70         | 99                | 99       | 99       | 99                | 99       | 99       | 97                | 99       | 98       | 94                    | 99       | 97       | 97        |
| 71         | 99                | 99       | 99       | 99                | 99       | 99       | 97                | 99       | 99       | 94                    | 99       | 97       | 98        |
| 72         | 99                | 99       | 99       | 99                | 99       | 99       | 98                | 99       | 99       | 95                    | 99       | 97       | 98        |
| 73         | 99                | 99       | 99       | 99                | 99       | 99       | 99                | 99       | 99       | 96                    | 99       | 98       | 98        |
| 74         | 99                | 99       | 99       | 99                | 99       | 99       | 99                | 99       | 99       | 98                    | 99       | 99       | 99        |
| 75         | 99                | 99       | 99       | 99                | 99       | 99       | 99                | 99       | 99       | 98                    | 99       | 99       | 99        |
| 76         | 99                | 99       | 99       | 99                | 99       | 99       | 99                | 99       | 99       | 99                    | 99       | 99       | 99        |

**Table A-8. Male (M), Female (F), Combined-Gender (C), and Youth Population (YP) Norms for the ASVAB Subtest Mechanical Comprehension (MC)**

| <u>SSS</u> | <u>10th grade</u> |          |          | <u>11th grade</u> |          |          | <u>12th grade</u> |          |          | <u>Post Secondary</u> |          |          | <u>YP</u> |
|------------|-------------------|----------|----------|-------------------|----------|----------|-------------------|----------|----------|-----------------------|----------|----------|-----------|
|            | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>              | <u>F</u> | <u>C</u> |           |
| 21         | 1                 | 1        | 1        | 1                 | 1        | 1        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 22         | 3                 | 1        | 2        | 1                 | 1        | 1        | 1                 | 2        | 1        | 1                     | 1        | 1        | 1         |
| 23         | 3                 | 2        | 3        | 1                 | 2        | 2        | 1                 | 3        | 2        | 1                     | 1        | 1        | 1         |
| 24         | 4                 | 2        | 3        | 2                 | 2        | 2        | 1                 | 3        | 2        | 1                     | 1        | 1        | 1         |
| 25         | 4                 | 4        | 4        | 2                 | 3        | 2        | 1                 | 3        | 2        | 1                     | 2        | 1        | 2         |
| 26         | 5                 | 4        | 5        | 2                 | 3        | 3        | 2                 | 4        | 3        | 1                     | 2        | 1        | 2         |
| 27         | 6                 | 5        | 6        | 3                 | 4        | 4        | 2                 | 4        | 3        | 1                     | 2        | 2        | 2         |
| 28         | 7                 | 7        | 7        | 4                 | 5        | 4        | 3                 | 4        | 4        | 1                     | 3        | 2        | 3         |
| 29         | 8                 | 8        | 8        | 4                 | 6        | 5        | 4                 | 5        | 4        | 1                     | 3        | 2        | 3         |
| 30         | 9                 | 9        | 9        | 5                 | 8        | 7        | 4                 | 6        | 5        | 2                     | 4        | 3        | 4         |
| 31         | 10                | 12       | 11       | 6                 | 9        | 7        | 5                 | 7        | 6        | 2                     | 5        | 4        | 5         |
| 32         | 11                | 13       | 12       | 7                 | 10       | 9        | 7                 | 8        | 8        | 2                     | 6        | 4        | 6         |
| 33         | 13                | 15       | 14       | 8                 | 12       | 10       | 8                 | 9        | 8        | 2                     | 7        | 5        | 6         |
| 34         | 14                | 17       | 15       | 9                 | 13       | 11       | 8                 | 11       | 10       | 3                     | 8        | 5        | 7         |
| 35         | 15                | 19       | 17       | 10                | 15       | 13       | 9                 | 13       | 11       | 3                     | 9        | 6        | 8         |
| 36         | 17                | 21       | 19       | 11                | 16       | 14       | 9                 | 14       | 12       | 4                     | 10       | 7        | 9         |
| 37         | 19                | 23       | 21       | 13                | 19       | 16       | 11                | 16       | 13       | 5                     | 12       | 8        | 11        |
| 38         | 20                | 26       | 23       | 14                | 21       | 18       | 12                | 18       | 15       | 5                     | 13       | 9        | 13        |
| 39         | 22                | 29       | 26       | 15                | 26       | 20       | 14                | 20       | 17       | 6                     | 15       | 11       | 14        |
| 40         | 24                | 31       | 27       | 16                | 29       | 22       | 15                | 22       | 19       | 7                     | 17       | 12       | 16        |
| 41         | 26                | 34       | 30       | 17                | 32       | 24       | 17                | 25       | 21       | 8                     | 20       | 14       | 18        |
| 42         | 29                | 38       | 33       | 18                | 35       | 27       | 18                | 28       | 23       | 9                     | 24       | 17       | 20        |
| 43         | 31                | 41       | 36       | 21                | 40       | 30       | 19                | 33       | 26       | 12                    | 29       | 21       | 23        |
| 44         | 34                | 45       | 39       | 24                | 44       | 34       | 22                | 37       | 29       | 15                    | 33       | 25       | 25        |
| 45         | 37                | 51       | 44       | 27                | 48       | 37       | 24                | 41       | 33       | 19                    | 39       | 29       | 29        |
| 46         | 40                | 56       | 48       | 29                | 51       | 40       | 27                | 46       | 36       | 21                    | 43       | 32       | 32        |
| 47         | 44                | 59       | 52       | 34                | 57       | 45       | 29                | 52       | 40       | 23                    | 49       | 36       | 36        |
| 48         | 49                | 65       | 57       | 39                | 62       | 51       | 32                | 57       | 44       | 26                    | 54       | 41       | 40        |
| 49         | 54                | 70       | 62       | 44                | 67       | 55       | 36                | 64       | 50       | 29                    | 63       | 47       | 45        |
| 50         | 60                | 75       | 67       | 51                | 71       | 61       | 41                | 71       | 56       | 35                    | 68       | 52       | 50        |
| 51         | 64                | 80       | 72       | 55                | 78       | 66       | 46                | 78       | 62       | 41                    | 73       | 58       | 55        |
| 52         | 67                | 85       | 76       | 59                | 82       | 71       | 52                | 83       | 67       | 47                    | 77       | 63       | 60        |
| 53         | 72                | 88       | 79       | 64                | 86       | 75       | 59                | 86       | 72       | 51                    | 82       | 67       | 65        |
| 54         | 76                | 91       | 83       | 69                | 89       | 79       | 64                | 89       | 76       | 56                    | 85       | 72       | 69        |
| 55         | 80                | 93       | 86       | 73                | 92       | 82       | 68                | 92       | 80       | 61                    | 89       | 76       | 73        |
| 56         | 83                | 95       | 89       | 79                | 94       | 86       | 72                | 94       | 83       | 65                    | 93       | 80       | 77        |
| 57         | 85                | 97       | 91       | 82                | 95       | 88       | 76                | 95       | 85       | 68                    | 95       | 82       | 79        |
| 58         | 88                | 98       | 93       | 85                | 96       | 91       | 78                | 97       | 87       | 74                    | 96       | 86       | 82        |
| 59         | 90                | 98       | 94       | 88                | 97       | 92       | 80                | 97       | 89       | 78                    | 97       | 88       | 85        |
| 60         | 92                | 99       | 95       | 89                | 98       | 93       | 82                | 98       | 90       | 82                    | 97       | 90       | 87        |
| 61         | 94                | 99       | 96       | 90                | 98       | 94       | 85                | 99       | 92       | 86                    | 98       | 92       | 89        |
| 62         | 95                | 99       | 97       | 91                | 99       | 95       | 87                | 99       | 93       | 87                    | 98       | 93       | 90        |
| 63         | 96                | 99       | 98       | 93                | 99       | 96       | 88                | 99       | 94       | 89                    | 99       | 94       | 92        |
| 64         | 96                | 99       | 98       | 94                | 99       | 97       | 90                | 99       | 95       | 90                    | 99       | 95       | 93        |
| 65         | 97                | 99       | 98       | 95                | 99       | 98       | 91                | 99       | 96       | 91                    | 99       | 95       | 94        |
| 66         | 98                | 99       | 99       | 96                | 99       | 98       | 94                | 99       | 97       | 93                    | 99       | 96       | 95        |
| 67         | 98                | 99       | 99       | 97                | 99       | 98       | 95                | 99       | 97       | 94                    | 99       | 97       | 96        |
| 68         | 98                | 99       | 99       | 97                | 99       | 98       | 96                | 99       | 98       | 96                    | 99       | 98       | 97        |
| 69         | 99                | 99       | 99       | 97                | 99       | 99       | 97                | 99       | 98       | 97                    | 99       | 98       | 98        |
| 70         | 99                | 99       | 99       | 97                | 99       | 99       | 98                | 99       | 99       | 98                    | 99       | 99       | 98        |
| 71         | 99                | 99       | 99       | 98                | 99       | 99       | 99                | 99       | 99       | 98                    | 99       | 99       | 98        |
| 72         | 99                | 99       | 99       | 99                | 99       | 99       | 99                | 99       | 99       | 98                    | 99       | 99       | 99        |
| 73         | 99                | 99       | 99       | 99                | 99       | 99       | 99                | 99       | 99       | 99                    | 99       | 99       | 99        |

**Table A-9. Male (M), Female (F), Combined-Gender (C), and Youth Population (YP) Norms for the ASVAB Subtest Assembling Objects (AO)**

| <u>SSS</u> | <u>10th grade</u> |          |          | <u>11th grade</u> |          |          | <u>12th grade</u> |          |          | <u>Post Secondary</u> |          |          | <u>YP</u> |
|------------|-------------------|----------|----------|-------------------|----------|----------|-------------------|----------|----------|-----------------------|----------|----------|-----------|
|            | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>              | <u>F</u> | <u>C</u> |           |
| 26         | 1                 | 1        | 1        | 1                 | 1        | 1        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 27         | 1                 | 1        | 1        | 1                 | 2        | 1        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 28         | 2                 | 2        | 2        | 2                 | 3        | 2        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 29         | 3                 | 4        | 4        | 3                 | 3        | 3        | 2                 | 2        | 2        | 1                     | 2        | 2        | 2         |
| 30         | 5                 | 6        | 5        | 5                 | 5        | 5        | 4                 | 3        | 3        | 2                     | 3        | 3        | 3         |
| 31         | 7                 | 7        | 7        | 7                 | 7        | 7        | 6                 | 4        | 5        | 4                     | 5        | 4        | 5         |
| 32         | 8                 | 9        | 9        | 9                 | 8        | 9        | 8                 | 6        | 7        | 5                     | 6        | 6        | 6         |
| 33         | 11                | 10       | 11       | 11                | 10       | 10       | 10                | 8        | 9        | 7                     | 8        | 7        | 8         |
| 34         | 14                | 12       | 13       | 13                | 11       | 12       | 11                | 9        | 10       | 9                     | 9        | 9        | 9         |
| 35         | 17                | 13       | 15       | 16                | 12       | 14       | 12                | 11       | 11       | 10                    | 12       | 11       | 11        |
| 36         | 20                | 15       | 18       | 17                | 14       | 15       | 13                | 12       | 13       | 11                    | 13       | 12       | 12        |
| 37         | 22                | 17       | 19       | 20                | 16       | 18       | 14                | 13       | 14       | 12                    | 14       | 13       | 13        |
| 38         | 25                | 19       | 22       | 22                | 18       | 20       | 16                | 15       | 16       | 13                    | 16       | 14       | 15        |
| 39         | 28                | 21       | 24       | 23                | 20       | 22       | 18                | 18       | 18       | 13                    | 17       | 16       | 17        |
| 40         | 29                | 24       | 27       | 26                | 22       | 24       | 20                | 22       | 21       | 15                    | 20       | 18       | 19        |
| 41         | 34                | 26       | 30       | 28                | 25       | 26       | 23                | 24       | 23       | 18                    | 22       | 20       | 21        |
| 42         | 38                | 29       | 34       | 31                | 27       | 29       | 25                | 27       | 26       | 20                    | 25       | 23       | 24        |
| 43         | 42                | 33       | 38       | 34                | 29       | 32       | 28                | 31       | 29       | 22                    | 27       | 25       | 27        |
| 44         | 47                | 37       | 42       | 37                | 32       | 35       | 31                | 35       | 33       | 24                    | 33       | 29       | 30        |
| 45         | 50                | 40       | 45       | 40                | 35       | 38       | 34                | 37       | 35       | 27                    | 34       | 31       | 33        |
| 46         | 53                | 43       | 48       | 42                | 38       | 40       | 36                | 40       | 38       | 30                    | 36       | 33       | 35        |
| 47         | 55                | 47       | 51       | 45                | 41       | 43       | 39                | 43       | 41       | 31                    | 38       | 35       | 38        |
| 48         | 57                | 51       | 54       | 48                | 45       | 46       | 42                | 46       | 44       | 36                    | 41       | 39       | 40        |
| 49         | 60                | 54       | 57       | 52                | 48       | 50       | 45                | 49       | 47       | 39                    | 45       | 42       | 43        |
| 50         | 63                | 56       | 60       | 54                | 50       | 52       | 47                | 51       | 49       | 44                    | 48       | 46       | 46        |
| 51         | 66                | 61       | 63       | 57                | 55       | 56       | 50                | 55       | 53       | 48                    | 51       | 50       | 50        |
| 52         | 68                | 64       | 67       | 60                | 59       | 59       | 52                | 59       | 56       | 51                    | 54       | 52       | 53        |
| 53         | 71                | 69       | 70       | 62                | 61       | 62       | 55                | 64       | 59       | 56                    | 59       | 57       | 58        |
| 54         | 74                | 72       | 73       | 66                | 66       | 66       | 59                | 68       | 64       | 59                    | 64       | 61       | 62        |
| 55         | 77                | 77       | 77       | 68                | 71       | 70       | 65                | 74       | 69       | 64                    | 68       | 66       | 67        |
| 56         | 81                | 82       | 81       | 73                | 76       | 74       | 68                | 77       | 73       | 69                    | 75       | 72       | 72        |
| 57         | 84                | 85       | 85       | 77                | 80       | 79       | 72                | 82       | 77       | 74                    | 80       | 77       | 76        |
| 58         | 87                | 89       | 88       | 81                | 85       | 83       | 76                | 86       | 81       | 78                    | 85       | 82       | 80        |
| 59         | 89                | 91       | 90       | 84                | 87       | 85       | 80                | 87       | 84       | 80                    | 89       | 85       | 83        |
| 60         | 91                | 94       | 92       | 87                | 89       | 88       | 83                | 90       | 87       | 82                    | 91       | 87       | 86        |
| 61         | 94                | 95       | 94       | 89                | 91       | 90       | 86                | 92       | 89       | 86                    | 93       | 90       | 88        |
| 62         | 95                | 96       | 95       | 93                | 93       | 93       | 89                | 95       | 92       | 89                    | 95       | 92       | 91        |
| 63         | 97                | 97       | 97       | 96                | 95       | 95       | 91                | 96       | 94       | 91                    | 96       | 93       | 93        |
| 64         | 98                | 98       | 98       | 97                | 96       | 97       | 94                | 97       | 95       | 92                    | 97       | 95       | 94        |
| 65         | 98                | 99       | 99       | 98                | 97       | 97       | 95                | 98       | 97       | 93                    | 97       | 95       | 96        |
| 66         | 99                | 99       | 99       | 98                | 98       | 98       | 98                | 99       | 98       | 95                    | 98       | 96       | 97        |
| 67         | 99                | 99       | 99       | 99                | 99       | 99       | 98                | 99       | 99       | 97                    | 99       | 98       | 98        |
| 68         | 99                | 99       | 99       | 99                | 99       | 99       | 99                | 99       | 99       | 98                    | 99       | 98       | 98        |
| 69         | 99                | 99       | 99       | 99                | 99       | 99       | 99                | 99       | 99       | 99                    | 99       | 99       | 99        |

**Table A-10. Male (M), Female (F), Combined-Gender (C), and Youth Population (YP) Norms for the ASVAB Subtest Verbal (VE = WK + PC)**

| <u>SSS</u> | <u>10th grade</u> |          |          | <u>11th grade</u> |          |          | <u>12th grade</u> |          |          | <u>Post Secondary</u> |          |          | <u>YP</u> |
|------------|-------------------|----------|----------|-------------------|----------|----------|-------------------|----------|----------|-----------------------|----------|----------|-----------|
|            | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>              | <u>F</u> | <u>C</u> |           |
| 19         | 1                 | 1        | 1        | 1                 | 1        | 1        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 20         | 2                 | 1        | 1        | 1                 | 2        | 2        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 21         | 3                 | 2        | 2        | 1                 | 2        | 2        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 22         | 3                 | 3        | 3        | 1                 | 2        | 2        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 23         | 4                 | 3        | 3        | 2                 | 3        | 2        | 2                 | 1        | 2        | 1                     | 1        | 1        | 1         |
| 24         | 5                 | 3        | 4        | 2                 | 3        | 3        | 2                 | 2        | 2        | 1                     | 1        | 1        | 1         |
| 25         | 6                 | 4        | 5        | 3                 | 3        | 3        | 3                 | 2        | 2        | 1                     | 1        | 1        | 2         |
| 26         | 7                 | 5        | 6        | 4                 | 4        | 4        | 3                 | 3        | 3        | 1                     | 1        | 1        | 2         |
| 27         | 8                 | 6        | 7        | 4                 | 4        | 4        | 4                 | 4        | 4        | 1                     | 1        | 1        | 3         |
| 28         | 10                | 7        | 8        | 6                 | 5        | 5        | 4                 | 4        | 4        | 2                     | 1        | 2        | 3         |
| 29         | 12                | 8        | 10       | 6                 | 6        | 6        | 5                 | 4        | 5        | 2                     | 1        | 2        | 4         |
| 30         | 14                | 9        | 11       | 7                 | 7        | 7        | 6                 | 5        | 5        | 2                     | 2        | 2        | 4         |
| 31         | 17                | 11       | 14       | 9                 | 8        | 8        | 7                 | 6        | 6        | 3                     | 3        | 3        | 5         |
| 32         | 19                | 12       | 16       | 10                | 9        | 10       | 8                 | 6        | 7        | 3                     | 4        | 3        | 6         |
| 33         | 21                | 14       | 18       | 11                | 11       | 11       | 10                | 7        | 8        | 3                     | 4        | 4        | 6         |
| 34         | 23                | 16       | 19       | 15                | 13       | 14       | 11                | 8        | 10       | 5                     | 5        | 5        | 7         |
| 35         | 26                | 18       | 22       | 17                | 15       | 16       | 12                | 10       | 11       | 5                     | 5        | 5        | 8         |
| 36         | 28                | 21       | 24       | 20                | 18       | 19       | 13                | 12       | 12       | 6                     | 6        | 6        | 9         |
| 37         | 32                | 25       | 29       | 22                | 20       | 21       | 15                | 14       | 14       | 7                     | 7        | 7        | 11        |
| 38         | 35                | 28       | 32       | 24                | 22       | 23       | 17                | 17       | 17       | 8                     | 8        | 8        | 12        |
| 39         | 37                | 31       | 34       | 26                | 25       | 26       | 19                | 20       | 19       | 11                    | 10       | 10       | 14        |
| 40         | 40                | 36       | 38       | 28                | 29       | 28       | 21                | 22       | 22       | 14                    | 12       | 13       | 17        |
| 41         | 43                | 38       | 41       | 31                | 31       | 31       | 23                | 25       | 24       | 16                    | 14       | 15       | 19        |
| 42         | 46                | 42       | 44       | 33                | 34       | 34       | 26                | 28       | 27       | 17                    | 16       | 17       | 22        |
| 43         | 49                | 44       | 47       | 38                | 37       | 37       | 28                | 33       | 30       | 19                    | 18       | 19       | 24        |
| 44         | 51                | 48       | 49       | 40                | 41       | 41       | 31                | 36       | 34       | 23                    | 21       | 22       | 27        |
| 45         | 56                | 51       | 54       | 44                | 44       | 44       | 35                | 40       | 37       | 25                    | 25       | 25       | 30        |
| 46         | 59                | 56       | 58       | 48                | 48       | 48       | 39                | 45       | 42       | 28                    | 28       | 28       | 34        |
| 47         | 65                | 60       | 63       | 52                | 51       | 52       | 42                | 48       | 45       | 32                    | 33       | 32       | 37        |
| 48         | 68                | 65       | 67       | 58                | 56       | 57       | 47                | 52       | 49       | 34                    | 37       | 36       | 40        |
| 49         | 71                | 70       | 70       | 61                | 60       | 61       | 51                | 56       | 54       | 39                    | 42       | 41       | 44        |
| 50         | 75                | 74       | 75       | 65                | 65       | 65       | 56                | 61       | 58       | 45                    | 49       | 47       | 48        |
| 51         | 77                | 78       | 78       | 69                | 69       | 69       | 60                | 66       | 63       | 49                    | 53       | 51       | 53        |
| 52         | 81                | 83       | 82       | 72                | 73       | 73       | 63                | 70       | 67       | 55                    | 56       | 56       | 56        |
| 53         | 86                | 86       | 86       | 77                | 77       | 77       | 68                | 75       | 72       | 60                    | 61       | 60       | 61        |
| 54         | 88                | 88       | 88       | 80                | 81       | 81       | 72                | 81       | 76       | 65                    | 65       | 65       | 65        |
| 55         | 91                | 90       | 91       | 86                | 84       | 85       | 77                | 84       | 81       | 70                    | 70       | 70       | 69        |
| 56         | 93                | 93       | 93       | 88                | 86       | 87       | 81                | 87       | 84       | 74                    | 76       | 75       | 73        |
| 57         | 95                | 94       | 95       | 91                | 90       | 90       | 84                | 91       | 87       | 80                    | 81       | 80       | 76        |
| 58         | 96                | 95       | 96       | 94                | 92       | 93       | 86                | 92       | 89       | 84                    | 84       | 84       | 80        |
| 59         | 97                | 97       | 97       | 95                | 93       | 94       | 89                | 93       | 91       | 89                    | 86       | 87       | 84        |
| 60         | 98                | 97       | 97       | 96                | 94       | 95       | 92                | 95       | 93       | 92                    | 88       | 90       | 86        |
| 61         | 98                | 97       | 98       | 97                | 95       | 96       | 94                | 96       | 95       | 93                    | 90       | 92       | 89        |
| 62         | 98                | 99       | 99       | 98                | 96       | 97       | 95                | 97       | 96       | 95                    | 92       | 93       | 91        |
| 63         | 99                | 99       | 99       | 98                | 97       | 97       | 96                | 98       | 97       | 96                    | 93       | 94       | 93        |
| 64         | 99                | 99       | 99       | 98                | 97       | 98       | 97                | 99       | 98       | 96                    | 95       | 96       | 94        |
| 65         | 99                | 99       | 99       | 99                | 98       | 98       | 98                | 99       | 99       | 98                    | 97       | 97       | 96        |
| 66         | 99                | 99       | 99       | 99                | 98       | 99       | 99                | 99       | 99       | 98                    | 98       | 98       | 97        |
| 67         | 99                | 99       | 99       | 99                | 99       | 99       | 99                | 99       | 99       | 99                    | 98       | 99       | 98        |
| 68         | 99                | 99       | 99       | 99                | 99       | 99       | 99                | 99       | 99       | 99                    | 99       | 99       | 99        |

**Table A-11. Male (M), Female (F), Combined-Gender (C), and Youth Population (YP) Norms for the ASVAB Math Skills Composite**

| <u>SSS</u> | <u>10th grade</u> |          |          | <u>11th grade</u> |          |          | <u>12th grade</u> |          |          | <u>Post Secondary</u> |          |          | <u>YP</u> |
|------------|-------------------|----------|----------|-------------------|----------|----------|-------------------|----------|----------|-----------------------|----------|----------|-----------|
|            | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>              | <u>F</u> | <u>C</u> |           |
| 21         | 1                 | 1        | 1        | 1                 | 1        | 1        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 22         | 2                 | 1        | 1        | 1                 | 1        | 1        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 23         | 2                 | 1        | 2        | 2                 | 2        | 2        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 24         | 3                 | 1        | 2        | 2                 | 2        | 2        | 2                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 25         | 3                 | 2        | 3        | 3                 | 3        | 3        | 2                 | 2        | 2        | 1                     | 1        | 1        | 1         |
| 26         | 4                 | 2        | 3        | 3                 | 4        | 3        | 3                 | 2        | 3        | 1                     | 1        | 1        | 2         |
| 27         | 6                 | 3        | 4        | 3                 | 4        | 4        | 3                 | 2        | 3        | 1                     | 1        | 1        | 2         |
| 28         | 7                 | 4        | 6        | 4                 | 4        | 4        | 5                 | 3        | 4        | 1                     | 1        | 1        | 3         |
| 29         | 8                 | 5        | 6        | 5                 | 5        | 5        | 5                 | 3        | 4        | 1                     | 1        | 1        | 3         |
| 30         | 9                 | 5        | 7        | 5                 | 6        | 6        | 6                 | 3        | 5        | 2                     | 1        | 1        | 3         |
| 31         | 10                | 6        | 8        | 6                 | 6        | 6        | 6                 | 4        | 5        | 2                     | 1        | 1        | 4         |
| 32         | 11                | 8        | 10       | 7                 | 6        | 6        | 7                 | 5        | 6        | 2                     | 1        | 1        | 5         |
| 33         | 13                | 9        | 11       | 7                 | 8        | 7        | 7                 | 6        | 7        | 2                     | 1        | 2        | 5         |
| 34         | 14                | 11       | 13       | 9                 | 8        | 8        | 8                 | 8        | 8        | 3                     | 1        | 2        | 6         |
| 35         | 15                | 13       | 14       | 9                 | 10       | 10       | 9                 | 9        | 9        | 3                     | 2        | 3        | 8         |
| 36         | 19                | 14       | 17       | 11                | 12       | 11       | 10                | 10       | 10       | 4                     | 2        | 3        | 9         |
| 37         | 22                | 17       | 20       | 13                | 13       | 13       | 11                | 12       | 11       | 4                     | 4        | 4        | 11        |
| 38         | 24                | 20       | 22       | 15                | 15       | 15       | 12                | 14       | 13       | 7                     | 6        | 6        | 13        |
| 39         | 26                | 22       | 24       | 16                | 17       | 17       | 14                | 16       | 15       | 9                     | 7        | 8        | 15        |
| 40         | 29                | 26       | 27       | 19                | 20       | 19       | 15                | 19       | 17       | 9                     | 9        | 9        | 17        |
| 41         | 30                | 28       | 29       | 20                | 20       | 20       | 15                | 20       | 18       | 10                    | 11       | 11       | 19        |
| 42         | 34                | 31       | 32       | 22                | 23       | 23       | 17                | 22       | 19       | 12                    | 13       | 13       | 22        |
| 43         | 36                | 34       | 35       | 27                | 27       | 27       | 19                | 26       | 22       | 14                    | 17       | 15       | 25        |
| 44         | 40                | 38       | 39       | 30                | 31       | 31       | 21                | 31       | 26       | 15                    | 20       | 18       | 28        |
| 45         | 45                | 43       | 44       | 34                | 35       | 34       | 25                | 34       | 30       | 19                    | 24       | 22       | 32        |
| 46         | 50                | 48       | 49       | 37                | 38       | 38       | 27                | 38       | 33       | 22                    | 30       | 26       | 36        |
| 47         | 54                | 52       | 53       | 41                | 42       | 42       | 30                | 44       | 37       | 25                    | 35       | 30       | 40        |
| 48         | 60                | 56       | 58       | 46                | 46       | 46       | 34                | 47       | 41       | 30                    | 39       | 35       | 44        |
| 49         | 64                | 63       | 63       | 52                | 51       | 51       | 40                | 50       | 45       | 36                    | 43       | 40       | 47        |
| 50         | 66                | 66       | 66       | 54                | 53       | 54       | 43                | 52       | 48       | 39                    | 46       | 43       | 50        |
| 51         | 69                | 71       | 70       | 60                | 57       | 59       | 49                | 58       | 53       | 44                    | 53       | 49       | 54        |
| 52         | 73                | 75       | 74       | 64                | 63       | 63       | 52                | 63       | 58       | 50                    | 58       | 54       | 58        |
| 53         | 76                | 79       | 78       | 66                | 67       | 67       | 57                | 68       | 62       | 55                    | 64       | 60       | 62        |
| 54         | 79                | 83       | 81       | 71                | 71       | 71       | 61                | 73       | 67       | 61                    | 69       | 65       | 66        |
| 55         | 82                | 85       | 84       | 74                | 75       | 74       | 65                | 76       | 71       | 68                    | 75       | 71       | 71        |
| 56         | 85                | 88       | 86       | 77                | 77       | 77       | 69                | 79       | 74       | 72                    | 78       | 75       | 74        |
| 57         | 88                | 89       | 89       | 80                | 80       | 80       | 73                | 80       | 77       | 77                    | 82       | 80       | 77        |
| 58         | 90                | 92       | 91       | 82                | 83       | 82       | 76                | 83       | 79       | 79                    | 85       | 82       | 80        |
| 59         | 92                | 94       | 93       | 83                | 87       | 85       | 79                | 85       | 82       | 83                    | 88       | 85       | 83        |
| 60         | 93                | 95       | 94       | 84                | 88       | 86       | 81                | 86       | 83       | 85                    | 90       | 87       | 84        |
| 61         | 94                | 96       | 95       | 88                | 90       | 89       | 82                | 88       | 85       | 87                    | 92       | 90       | 87        |
| 62         | 95                | 98       | 96       | 90                | 92       | 91       | 84                | 89       | 87       | 89                    | 94       | 92       | 89        |
| 63         | 96                | 98       | 97       | 93                | 94       | 93       | 87                | 93       | 90       | 92                    | 95       | 94       | 91        |
| 64         | 98                | 99       | 98       | 94                | 96       | 95       | 89                | 95       | 92       | 94                    | 96       | 95       | 93        |
| 65         | 98                | 99       | 99       | 95                | 97       | 96       | 92                | 96       | 94       | 96                    | 98       | 97       | 95        |
| 66         | 99                | 99       | 99       | 96                | 98       | 97       | 94                | 99       | 96       | 97                    | 99       | 98       | 96        |
| 67         | 99                | 99       | 99       | 98                | 99       | 98       | 96                | 99       | 98       | 98                    | 99       | 99       | 97        |
| 68         | 99                | 99       | 99       | 99                | 99       | 99       | 97                | 99       | 98       | 98                    | 99       | 99       | 98        |
| 69         | 99                | 99       | 99       | 99                | 99       | 99       | 97                | 99       | 99       | 99                    | 99       | 99       | 98        |
| 70         | 99                | 99       | 99       | 99                | 99       | 99       | 98                | 99       | 99       | 99                    | 99       | 99       | 99        |
| 71         | 99                | 99       | 99       | 99                | 99       | 99       | 98                | 99       | 99       | 99                    | 99       | 99       | 99        |
| 72         | 99                | 99       | 99       | 99                | 99       | 99       | 99                | 99       | 99       | 99                    | 99       | 99       | 99        |

**Table A-12. Male (M), Female (F), Combined-Gender (C), and Youth Population (YP) Norms for the ASVAB Verbal Skills Composite**

| <u>SSS</u> | <u>10th grade</u> |          |          | <u>11th grade</u> |          |          | <u>12th grade</u> |          |          | <u>Post Secondary</u> |          |          | <u>YP</u> |
|------------|-------------------|----------|----------|-------------------|----------|----------|-------------------|----------|----------|-----------------------|----------|----------|-----------|
|            | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>              | <u>F</u> | <u>C</u> |           |
| 19         | 1                 | 1        | 1        | 1                 | 1        | 1        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 20         | 2                 | 1        | 1        | 1                 | 2        | 2        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 21         | 3                 | 2        | 2        | 1                 | 2        | 2        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 22         | 3                 | 3        | 3        | 1                 | 2        | 2        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 23         | 4                 | 3        | 3        | 2                 | 3        | 2        | 2                 | 1        | 2        | 1                     | 1        | 1        | 1         |
| 24         | 5                 | 3        | 4        | 2                 | 3        | 3        | 2                 | 2        | 2        | 1                     | 1        | 1        | 1         |
| 25         | 6                 | 4        | 5        | 3                 | 3        | 3        | 3                 | 2        | 2        | 1                     | 1        | 1        | 2         |
| 26         | 7                 | 5        | 6        | 4                 | 4        | 4        | 3                 | 3        | 3        | 1                     | 1        | 1        | 2         |
| 27         | 8                 | 6        | 7        | 4                 | 4        | 4        | 4                 | 4        | 4        | 1                     | 1        | 1        | 3         |
| 28         | 10                | 7        | 8        | 6                 | 5        | 5        | 4                 | 4        | 4        | 2                     | 1        | 2        | 3         |
| 29         | 12                | 8        | 10       | 6                 | 6        | 6        | 5                 | 4        | 5        | 2                     | 1        | 2        | 4         |
| 30         | 14                | 9        | 11       | 7                 | 7        | 7        | 6                 | 5        | 5        | 2                     | 2        | 2        | 4         |
| 31         | 17                | 11       | 14       | 9                 | 8        | 8        | 7                 | 6        | 6        | 3                     | 3        | 3        | 5         |
| 32         | 19                | 12       | 16       | 10                | 9        | 10       | 8                 | 6        | 7        | 3                     | 4        | 3        | 6         |
| 33         | 21                | 14       | 18       | 11                | 11       | 11       | 10                | 7        | 8        | 3                     | 4        | 4        | 6         |
| 34         | 23                | 16       | 19       | 15                | 13       | 14       | 11                | 8        | 10       | 5                     | 5        | 5        | 7         |
| 35         | 26                | 18       | 22       | 17                | 15       | 16       | 12                | 10       | 11       | 5                     | 5        | 5        | 8         |
| 36         | 28                | 21       | 24       | 20                | 18       | 19       | 13                | 12       | 12       | 6                     | 6        | 6        | 9         |
| 37         | 32                | 25       | 29       | 22                | 20       | 21       | 15                | 14       | 14       | 7                     | 7        | 7        | 11        |
| 38         | 35                | 28       | 32       | 24                | 22       | 23       | 17                | 17       | 17       | 8                     | 8        | 8        | 12        |
| 39         | 37                | 31       | 34       | 26                | 25       | 26       | 19                | 20       | 19       | 11                    | 10       | 10       | 14        |
| 40         | 40                | 36       | 38       | 28                | 29       | 28       | 21                | 22       | 22       | 14                    | 12       | 13       | 17        |
| 41         | 43                | 38       | 41       | 31                | 31       | 31       | 23                | 25       | 24       | 16                    | 14       | 15       | 19        |
| 42         | 46                | 42       | 44       | 33                | 34       | 34       | 26                | 28       | 27       | 17                    | 16       | 17       | 22        |
| 43         | 49                | 44       | 47       | 38                | 37       | 37       | 28                | 33       | 30       | 19                    | 18       | 19       | 24        |
| 44         | 51                | 48       | 49       | 40                | 41       | 41       | 31                | 36       | 34       | 23                    | 21       | 22       | 27        |
| 45         | 56                | 51       | 54       | 44                | 44       | 44       | 35                | 40       | 37       | 25                    | 25       | 25       | 30        |
| 46         | 59                | 56       | 58       | 48                | 48       | 48       | 39                | 45       | 42       | 28                    | 28       | 28       | 34        |
| 47         | 65                | 60       | 63       | 52                | 51       | 52       | 42                | 48       | 45       | 32                    | 33       | 32       | 37        |
| 48         | 68                | 65       | 67       | 58                | 56       | 57       | 47                | 52       | 49       | 34                    | 37       | 36       | 40        |
| 49         | 71                | 70       | 70       | 61                | 60       | 61       | 51                | 56       | 54       | 39                    | 42       | 41       | 44        |
| 50         | 75                | 74       | 75       | 65                | 65       | 65       | 56                | 61       | 58       | 45                    | 49       | 47       | 48        |
| 51         | 77                | 78       | 78       | 69                | 69       | 69       | 60                | 66       | 63       | 49                    | 53       | 51       | 53        |
| 52         | 81                | 83       | 82       | 72                | 73       | 73       | 63                | 70       | 67       | 55                    | 56       | 56       | 56        |
| 53         | 86                | 86       | 86       | 77                | 77       | 77       | 68                | 75       | 72       | 60                    | 61       | 60       | 61        |
| 54         | 88                | 88       | 88       | 80                | 81       | 81       | 72                | 81       | 76       | 65                    | 65       | 65       | 65        |
| 55         | 91                | 90       | 91       | 86                | 84       | 85       | 77                | 84       | 81       | 70                    | 70       | 70       | 69        |
| 56         | 93                | 93       | 93       | 88                | 86       | 87       | 81                | 87       | 84       | 74                    | 76       | 75       | 73        |
| 57         | 95                | 94       | 95       | 91                | 90       | 90       | 84                | 91       | 87       | 80                    | 81       | 80       | 76        |
| 58         | 96                | 95       | 96       | 94                | 92       | 93       | 86                | 92       | 89       | 84                    | 84       | 84       | 80        |
| 59         | 97                | 97       | 97       | 95                | 93       | 94       | 89                | 93       | 91       | 89                    | 86       | 87       | 84        |
| 60         | 98                | 97       | 97       | 96                | 94       | 95       | 92                | 95       | 93       | 92                    | 88       | 90       | 86        |
| 61         | 98                | 97       | 98       | 97                | 95       | 96       | 94                | 96       | 95       | 93                    | 90       | 92       | 89        |
| 62         | 98                | 99       | 99       | 98                | 96       | 97       | 95                | 97       | 96       | 95                    | 92       | 93       | 91        |
| 63         | 99                | 99       | 99       | 98                | 97       | 97       | 96                | 98       | 97       | 96                    | 93       | 94       | 93        |
| 64         | 99                | 99       | 99       | 98                | 97       | 98       | 97                | 99       | 98       | 96                    | 95       | 96       | 94        |
| 65         | 99                | 99       | 99       | 99                | 98       | 98       | 98                | 99       | 99       | 98                    | 97       | 97       | 96        |
| 66         | 99                | 99       | 99       | 99                | 98       | 99       | 99                | 99       | 99       | 98                    | 98       | 98       | 97        |
| 67         | 99                | 99       | 99       | 99                | 99       | 99       | 99                | 99       | 99       | 99                    | 98       | 99       | 98        |
| 68         | 99                | 99       | 99       | 99                | 99       | 99       | 99                | 99       | 99       | 99                    | 99       | 99       | 99        |

**Table A-13. Male (M), Female (F), Combined-Gender (C), and Youth Population (YP) Norms for the ASVAB Science and Technical Skills Composite**

| <u>SSS</u> | <u>10th grade</u> |          |          | <u>11th grade</u> |          |          | <u>12th grade</u> |          |          | <u>Post Secondary</u> |          |          | <u>YP</u> |
|------------|-------------------|----------|----------|-------------------|----------|----------|-------------------|----------|----------|-----------------------|----------|----------|-----------|
|            | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>          | <u>F</u> | <u>C</u> | <u>M</u>              | <u>F</u> | <u>C</u> |           |
| 22         | 1                 | 1        | 1        | 1                 | 1        | 1        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 23         | 2                 | 1        | 1        | 1                 | 1        | 1        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 24         | 3                 | 2        | 2        | 1                 | 2        | 1        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 25         | 3                 | 2        | 3        | 2                 | 2        | 2        | 1                 | 1        | 1        | 1                     | 1        | 1        | 1         |
| 26         | 4                 | 3        | 4        | 2                 | 3        | 3        | 1                 | 2        | 2        | 1                     | 1        | 1        | 1         |
| 27         | 5                 | 4        | 5        | 3                 | 4        | 4        | 2                 | 3        | 2        | 1                     | 1        | 1        | 1         |
| 28         | 6                 | 5        | 6        | 3                 | 5        | 4        | 2                 | 3        | 3        | 1                     | 1        | 1        | 2         |
| 29         | 8                 | 7        | 8        | 4                 | 6        | 5        | 3                 | 4        | 4        | 1                     | 1        | 1        | 2         |
| 30         | 9                 | 9        | 9        | 4                 | 6        | 5        | 4                 | 5        | 4        | 1                     | 1        | 1        | 3         |
| 31         | 11                | 10       | 10       | 5                 | 8        | 7        | 4                 | 5        | 5        | 1                     | 2        | 1        | 4         |
| 32         | 12                | 11       | 12       | 6                 | 9        | 8        | 6                 | 7        | 6        | 1                     | 3        | 2        | 5         |
| 33         | 13                | 12       | 12       | 8                 | 10       | 9        | 7                 | 8        | 7        | 1                     | 4        | 3        | 6         |
| 34         | 15                | 16       | 15       | 9                 | 11       | 10       | 8                 | 11       | 9        | 2                     | 6        | 4        | 7         |
| 35         | 17                | 18       | 17       | 10                | 14       | 12       | 10                | 12       | 11       | 2                     | 7        | 5        | 9         |
| 36         | 19                | 22       | 20       | 11                | 16       | 14       | 11                | 14       | 12       | 3                     | 8        | 5        | 10        |
| 37         | 21                | 26       | 23       | 13                | 20       | 17       | 12                | 16       | 14       | 5                     | 11       | 8        | 12        |
| 38         | 24                | 29       | 27       | 14                | 23       | 19       | 12                | 19       | 16       | 6                     | 14       | 10       | 13        |
| 39         | 25                | 32       | 28       | 16                | 26       | 20       | 13                | 21       | 17       | 7                     | 16       | 12       | 15        |
| 40         | 28                | 37       | 33       | 18                | 29       | 24       | 15                | 25       | 20       | 9                     | 19       | 14       | 17        |
| 41         | 30                | 41       | 36       | 21                | 35       | 28       | 17                | 29       | 23       | 10                    | 24       | 18       | 20        |
| 42         | 33                | 44       | 38       | 23                | 38       | 30       | 19                | 32       | 25       | 11                    | 27       | 19       | 22        |
| 43         | 38                | 49       | 43       | 24                | 42       | 33       | 21                | 36       | 29       | 13                    | 32       | 23       | 25        |
| 44         | 41                | 54       | 47       | 29                | 47       | 38       | 23                | 42       | 33       | 15                    | 37       | 26       | 28        |
| 45         | 43                | 57       | 50       | 31                | 51       | 41       | 24                | 47       | 36       | 17                    | 40       | 29       | 31        |
| 46         | 49                | 61       | 55       | 36                | 55       | 46       | 28                | 53       | 40       | 21                    | 45       | 34       | 35        |
| 47         | 53                | 68       | 60       | 42                | 61       | 51       | 31                | 61       | 46       | 23                    | 50       | 37       | 38        |
| 48         | 56                | 73       | 64       | 45                | 66       | 55       | 34                | 65       | 50       | 25                    | 54       | 41       | 42        |
| 49         | 61                | 79       | 69       | 49                | 72       | 61       | 40                | 72       | 56       | 30                    | 61       | 47       | 46        |
| 50         | 64                | 83       | 73       | 56                | 78       | 67       | 43                | 76       | 60       | 34                    | 69       | 53       | 51        |
| 51         | 68                | 86       | 77       | 61                | 81       | 71       | 48                | 81       | 64       | 39                    | 76       | 58       | 56        |
| 52         | 72                | 89       | 80       | 64                | 84       | 74       | 52                | 84       | 68       | 42                    | 78       | 61       | 59        |
| 53         | 77                | 91       | 84       | 67                | 87       | 77       | 57                | 87       | 72       | 46                    | 83       | 65       | 64        |
| 54         | 80                | 93       | 86       | 73                | 90       | 81       | 61                | 90       | 76       | 51                    | 88       | 71       | 69        |
| 55         | 83                | 95       | 88       | 75                | 92       | 83       | 65                | 92       | 78       | 56                    | 89       | 73       | 71        |
| 56         | 84                | 96       | 90       | 79                | 94       | 87       | 69                | 93       | 81       | 62                    | 90       | 77       | 75        |
| 57         | 86                | 97       | 91       | 82                | 97       | 89       | 74                | 95       | 84       | 65                    | 93       | 80       | 79        |
| 58         | 87                | 98       | 92       | 85                | 97       | 91       | 76                | 96       | 86       | 68                    | 94       | 82       | 81        |
| 59         | 90                | 98       | 94       | 88                | 98       | 93       | 79                | 98       | 88       | 73                    | 95       | 85       | 84        |
| 60         | 92                | 99       | 95       | 90                | 98       | 94       | 82                | 99       | 90       | 77                    | 97       | 88       | 86        |
| 61         | 93                | 99       | 96       | 90                | 99       | 94       | 84                | 99       | 91       | 80                    | 97       | 89       | 88        |
| 62         | 94                | 99       | 97       | 94                | 99       | 96       | 87                | 99       | 93       | 85                    | 98       | 92       | 90        |
| 63         | 96                | 99       | 98       | 95                | 99       | 97       | 89                | 99       | 94       | 88                    | 98       | 93       | 92        |
| 64         | 97                | 99       | 98       | 95                | 99       | 97       | 89                | 99       | 94       | 90                    | 99       | 95       | 93        |
| 65         | 98                | 99       | 99       | 96                | 99       | 98       | 93                | 99       | 96       | 92                    | 99       | 96       | 94        |
| 66         | 99                | 99       | 99       | 97                | 99       | 98       | 95                | 99       | 97       | 94                    | 99       | 97       | 95        |
| 67         | 99                | 99       | 99       | 97                | 99       | 98       | 95                | 99       | 97       | 94                    | 99       | 97       | 96        |
| 68         | 99                | 99       | 99       | 97                | 99       | 99       | 96                | 99       | 98       | 96                    | 99       | 98       | 97        |
| 69         | 99                | 99       | 99       | 98                | 99       | 99       | 97                | 99       | 99       | 97                    | 99       | 98       | 97        |
| 70         | 99                | 99       | 99       | 98                | 99       | 99       | 97                | 99       | 99       | 97                    | 99       | 99       | 98        |
| 71         | 99                | 99       | 99       | 98                | 99       | 99       | 98                | 99       | 99       | 97                    | 99       | 99       | 98        |
| 72         | 99                | 99       | 99       | 99                | 99       | 99       | 98                | 99       | 99       | 98                    | 99       | 99       | 99        |
| 73         | 99                | 99       | 99       | 99                | 99       | 99       | 98                | 99       | 99       | 98                    | 99       | 99       | 99        |
| 74         | 99                | 99       | 99       | 99                | 99       | 99       | 99                | 99       | 99       | 99                    | 99       | 99       | 99        |