Math Diagnostic for Statistics
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Please answer the following questions. There are 19 questions about mathematics, including 7 questions on concepts of number, 6 questions on fractions, decimals, percentages, and 6 questions on algebra. Some questions are multiple choice; others ask you to find a value. Because the purpose of the diagnostic is to evaluate your knowledge at this time, you should answer the questions without searching for answers and you should not use a calculator.

1. What is $\sqrt{0.04}$?

    A. 0.016   B. 0.02   C. 0.16   D. 0.20

2. Round 0.13507 to two decimal places.

3. If a calculator displays the value 4.36E–03, what is the value in decimal form?

    A. 0.000436   B. 0.00436   C. 0.0436   D. 1.36

4. Which of the following is correct?

    A. 0.028 < 0.05   B. 0.028 = 0.05   C. 0.028 > 0.05

5. Choose the correct ordering of the numbers 0.07, 0.10, and 0.025 from *largest* to *smallest*.

    A. 0.07, 0.025, 0.10   B. 0.025, 0.07, 0.10   C. 0.10, 0.07, 0.025
    D. 0.07, 0.10, 0.025   E. 0.025, 0.10, 0.07   F. 0.10, 0.025, 0.07

6. Which of the following relationships about absolute value is True?

    A. $|-2.9| < |-7.3|$ B. $|2.9| > |-7.3|$
    C. $0 > |-7.3|$ D. $|2.9| > |7.3|$

7. What is 2 – 0.6 * 5?

8. Perform the following division: $\dfrac{1/2}{2/3}$ and choose the correct simplified fraction.

    A. $3/1$ B. $4/3$ C. $3/4$ D. $1/3$

9. In a group of 600 voters, two-thirds said they would vote for the challenger in the race for Governor. How many of the 600 voters said they would vote for the challenger?

10. Which of the following numbers is closest to 14/50?

    A. 0.10   B. 0.20   C. 0.30   D. 0.40

11. There are 80 students in a school. On a given examination, 64 of the students passed. What percentage of the students failed?

    A. 16%   B. 20%   C. 36%   D. 64%

12. Approximately 7.7% of the German male population is color blind. As a decimal, what proportion of German males are color blind?

      A. 0.77   B. 0.077   C. 0.0077   D. None of these

13. In 2000, about 45 out of every 100 teenagers worked for pay. By 2008, there had been a 20% decrease in the proportion of teenagers working for pay. In 2008, out of every 100 teenagers, about how many worked for pay?

      A. 25   B. 32   C. 36   D. 38

14. If X = 3 and Y = 5, what is the value of 2Y + 3X − 11?

15. Suppose that $X = \dfrac{A}{B}$. Then if X = 6 and B = 3, solve for A.
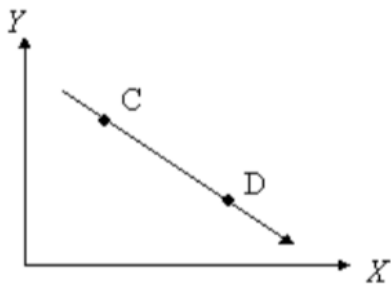
16. If A = 5, B = −2, and C = −4, what is the value of $3B^2 - AC$?

17. In the equation 4X + 12 = 8, solve for X.

18. If $Y = \dfrac{X-8}{2}$, which of the following is True?

      A. X = 2Y   B. X = 2Y − 8   C. X = 2Y + 8   D. X = Y + 4

19. In the graph below, the coordinates of point C are (2, 4) and the coordinates of point D are (8, 1). What is the slope of the line CD?