



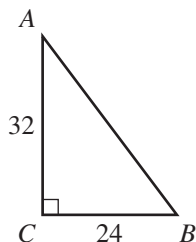
17. In the standard (x,y) coordinate plane, what is the slope of the line given by the equation $4x = 7y + 5$?

A. $-\frac{4}{7}$
 B. $\frac{4}{7}$
 C. $\frac{7}{4}$
 D. 4
 E. 7

18. For which of the following conditions will the sum of integers m and n *always* be an odd integer?

F. m is an odd integer.
 G. n is an odd integer.
 H. m and n are both odd integers.
 J. m and n are both even integers.
 K. m is an odd integer and n is an even integer.

19. The lengths of the 2 legs of right triangle $\triangle ABC$ shown below are given in inches. The midpoint of \overline{AB} is how many inches from A ?



A. 16
 B. 20
 C. 21
 D. 28
 E. 40

20. In $\triangle DEF$, the length of \overline{DE} is $\sqrt{30}$ inches, and the length of \overline{EF} is 3 inches. If it can be determined, what is the length, in inches, of \overline{DF} ?

F. 3
 G. $\sqrt{30}$
 H. $\sqrt{33}$
 J. $\sqrt{39}$
 K. Cannot be determined from the given information

21. Laura plans to paint the 8-foot-high rectangular walls of her room, and before she buys paint she needs to know the area of the wall surface to be painted. Two walls are 10 feet wide, and the other 2 walls are 15 feet wide. The combined area of the 1 window and the 1 door in her room is 60 square feet. What is the area, in square feet, of the wall surface Laura plans to paint?

A. 200
 B. 340
 C. 360
 D. 390
 E. 400

22. The length of a rectangle is 5 inches longer than the width. The perimeter of the rectangle is 40 inches. What is the width of the rectangle, in inches?

F. 7.5
 G. 8
 H. 15
 J. 16
 K. 17.5

23. 8% of 60 is $\frac{1}{5}$ of what number?

A. 0.96
 B. 12
 C. 24
 D. 240
 E. 3,750

24. Armin is trying to decide whether to buy a season pass to his college basketball team's 20 home games this season. The cost of an individual ticket is \$14, and the cost of a season pass is \$175. The season pass will admit Armin to any home basketball game at no additional cost. What is the minimum number of home basketball games Armin must attend this season in order for the cost of a season pass to be less than the total cost of buying an individual ticket for each game he attends?

F. 8
 G. 9
 H. 12
 J. 13
 K. 20

25. $\frac{4.8 \times 10^{-7}}{1.6 \times 10^{-11}} = ?$

A. 3.0×10^4
 B. 3.0×10^{-4}
 C. 3.0×10^{-18}
 D. 3.2×10^{18}
 E. 3.2×10^4

26. A circle in the standard (x,y) coordinate plane has center $C(-1,2)$ and passes through $A(2,6)$. Line segment \overline{AB} is a diameter of this circle. What are the coordinates of point B ?

F. $(-6,-2)$
 G. $(-5,-1)$
 H. $(-4,-2)$
 J. $(4, 2)$
 K. $(5,10)$

27. Which of the following expressions is a factor of $x^3 - 64$?

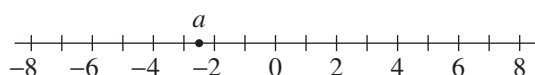
A. $x - 4$
 B. $x + 4$
 C. $x + 64$
 D. $x^2 + 16$
 E. $x^2 - 4x + 16$



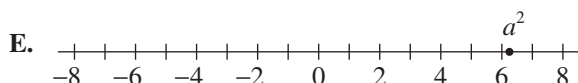
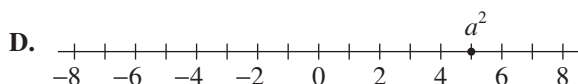
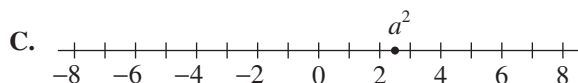
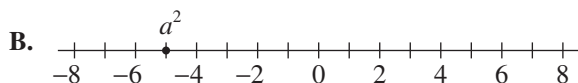
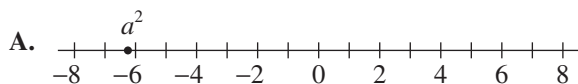
28. The average of a list of 4 numbers is 90.0. A new list of 4 numbers has the same first 3 numbers as the original list, but the fourth number in the original list is 80, and the fourth number in the new list is 96. What is the average of this new list of numbers?

F. 90.0
G. 91.5
H. 94.0
J. 94.5
K. 94.8

29. The number a is located at -2.5 on the number line below.



One of the following number lines shows the location of a^2 . Which number line is it?



30. Maria ordered a pizza. She ate only $\frac{2}{9}$ of it and gave the remaining pizza to her 3 brothers. What fraction of the whole pizza will each of Maria's brothers receive, if they share the remaining pizza equally?

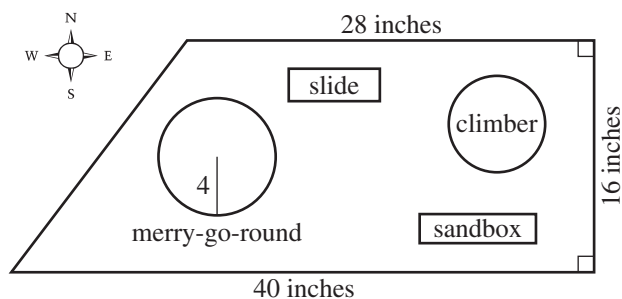
F. $\frac{7}{9}$
G. $\frac{3}{7}$
H. $\frac{1}{3}$
J. $\frac{7}{27}$
K. $\frac{2}{27}$

31. The number 1,001 is the product of the prime numbers 7, 11, and 13. Knowing this, what is the prime factorization of 30,030?

A. $3 \cdot 7 \cdot 10 \cdot 13$
B. $30 \cdot 7 \cdot 11 \cdot 13$
C. $2 \cdot 5 \cdot 7 \cdot 11 \cdot 13$
D. $3 \cdot 7 \cdot 10 \cdot 11 \cdot 13$
E. $2 \cdot 3 \cdot 5 \cdot 7 \cdot 11 \cdot 13$

Use the following information to answer questions 32–34.

Mikea, an intern with the Parks and Recreation Department, is developing a proposal for the new trapezoidal Springdale Park. The figure below shows her scale drawing of the proposed park with 3 side lengths and the radius of the merry-go-round given in inches. In Mikea's scale drawing, 1 inch represents 1.5 feet.



32. What is the area, in square inches, of the scale drawing of the park?

F. 448
G. 544
H. 640
J. 672
K. 1,088

33. Mikea's proposal includes installing a fence on the perimeter of the park. What is the perimeter, in *feet*, of the park?

A. 84
B. 88
C. 104
D. 126
E. 156

34. The length of the south side of the park is what percent of the length of the north side?

F. 112%
G. 124%
H. $142\frac{6}{7}\%$
J. 175%
K. 250%