

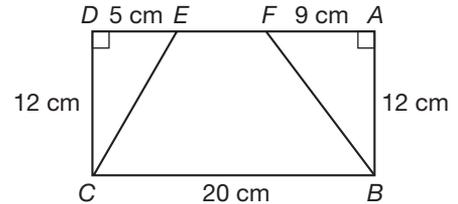
1. A deck of 26 alphabet cards ⁽⁸³⁾ contains one card for every letter including the vowels A, E, I, O, and U. One card is drawn and not replaced and then a second card is drawn. What is the probability that both cards are vowels?

2. Alex figured she saved \$12 buying ⁽⁶⁷⁾ the item at a 30% discount. How much did she pay for the item?

3. Which of the following is not a ⁽⁶⁹⁾ characteristic of a graph displaying direct variation?
- A. The graph is a line or aligned points.
 - B. The graph aligns with the origin.
 - C. The slope of the graph is positive.
 - D. The graph lies in the 2nd and 4th quadrants.

4. If an image on a computer screen ⁽⁷¹⁾ is increased 50%, then its area increases by what percent?

Figure $ABCD$ is a rectangle. Refer to this figure to answer questions 5 and 6.



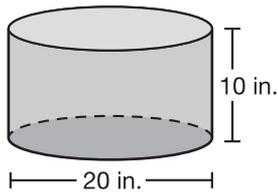
5. What are the lengths of CE , EF , and FB ? ^(8, Inv. 2)

6. What is the area of trapezoid ⁽⁷⁵⁾ $BCEF$?

7. A formula for this sequence is ⁽⁷³⁾ $a_n = n^2 - 2$. What is the twelfth term of the sequence?
 $-1, 2, 7, 14, \dots$

8. How much money is $66\frac{2}{3}\%$ of ⁽⁸⁶⁾ \$36.00?

For questions 9 and 10, refer to the cylinder.



9. What is the volume of the cylinder?
(76)

10. What is the lateral surface area of the cylinder?
(85)

11. Sketch the graph of the equation
(82) $2x + 3y = 6$.

12. Solve this equation for x :
(79) $ax + b = c$

13. Solve and graph on a number line:
(77) $3 - x < 4$

14. Convert 30 gallons per hour to quarts per minute using two unit multipliers. Show your work.
(64, 72)

For questions 15 and 16, solve for x .

15. $x - 0.5x = 1.2$
(50)

16. $\frac{2}{3}x - \frac{1}{3} = \frac{2}{3}$
(50)

For questions 17–20, simplify the expression.

17. $\frac{4x^2y^{-1}x}{6x^4y^2}$
(27, 51)

18. $3x^2 + 2x - x^2 - x$
(31, 33)

19. $(-2) - (-2)^2$
(33, 36)

20. $2\sqrt{3} \cdot \sqrt{6}$
(74, 78)

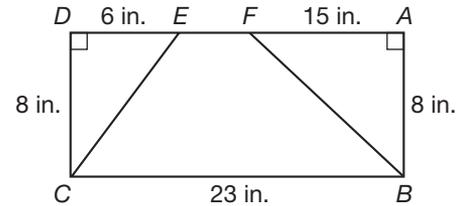
- 1.** Junior's box of animal crackers ⁽⁸³⁾ contains ten elephants, ten monkeys, ten zebras, and ten lions. Without looking, Junior grabs one cracker from the box and eats it. He then takes another random cracker from the box and eats it. What is the probability that both crackers were lions?

- 2.** Alicia figured she saved \$15 buying ⁽⁶⁷⁾ the item at a 30% discount. How much did she pay for the item?

- 3.** Which of the following is not a ⁽⁶⁹⁾ characteristic of a graph displaying direct variation?
- A.** The graph is a line or aligned points.
 - B.** The graph lies in the 2nd and 4th quadrants.
 - C.** The slope of the graph is positive.
 - D.** The graph aligns with the origin.

- 4.** If an image on a computer screen ⁽⁷¹⁾ is increased 100%, then its area increases by what percent?

Figure $ABCD$ is a rectangle. Refer to this figure to answer questions 5 and 6.



- 5.** What are the lengths of CE , EF , ^(8, Inv. 2) and FB ?

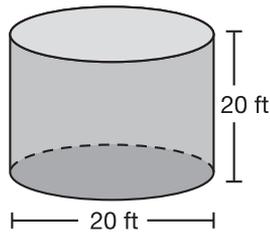
- 6.** What is the area of trapezoid ⁽⁷⁵⁾ $BCEF$?

- 7.** A formula for this sequence is ⁽⁷³⁾ $a_n = n^2 - 4$. What is the twelfth term of the sequence?

$-3, 0, 5, 12, \dots$

- 8.** How much money is ⁽⁸⁶⁾ $66\frac{2}{3}\%$ of \$48.00?

For questions 9 and 10, refer to the cylinder.



9. What is the volume of the cylindrical water tower?
(76)

10. What is the lateral surface area of the water tower?
(85)

11. Sketch the graph of the equation
(82) $3x + 2y = 6$.

12. Solve this equation for x :
(79) $mx + n = p$

13. Solve and graph on a number line:
(60) $5 - x > 3$

14. Sandra's shower head sprays water at a rate of 150 gallons per hour. Convert 150 gallons per hour to quarts per minute using two unit multipliers. Show your work.
(64, 72)

For questions 15 and 16, solve for x .

15. $x - 0.5x = 4.5$
(50)

16. $\frac{3}{4}x - \frac{1}{4} = \frac{3}{4}$
(50)

For questions 17–20, simplify the expression.

17. $\frac{6x^2y^{-1}x}{8x^4y^{-2}}$
(27, 51)

18. $5x^2 + x - 2x^2 - x$
(31, 33)

19. $(-3) - (-2)^3$
(33, 36)

20. $\sqrt{6} \cdot \sqrt{27}$
(74, 78)