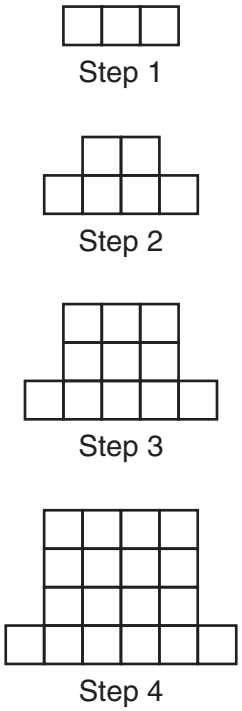
❸ Look at this pattern.



If the pattern continues, how many ☐ will be in Step 50?

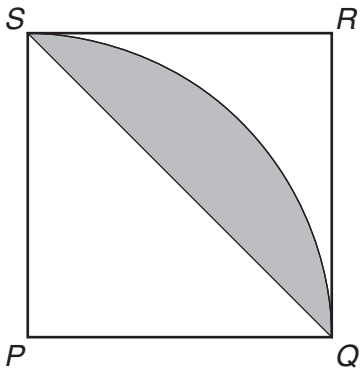
A. 100

B. 102

C. 2500

D. 2502

❹ Look at the shaded-gray figure in square *PQRS*.



The figure is formed by drawing a line segment and a quarter-circle.

- The line segment connects point *S* to point *Q*.
- The quarter-circle has a radius of 6.0 centimeters and has its center at point *P*.

What is the area, in square centimeters, of the shaded-gray figure?

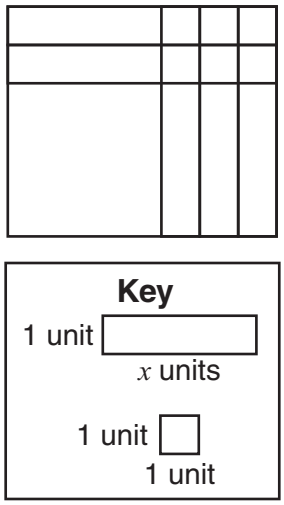
A. $9\pi - 18$

B. $\frac{9\pi}{2}$

C. 9π

D. $36\pi - 18$

8 Ariel used tiles to make this rectangle.



Which equation is modeled by Ariel's rectangle?

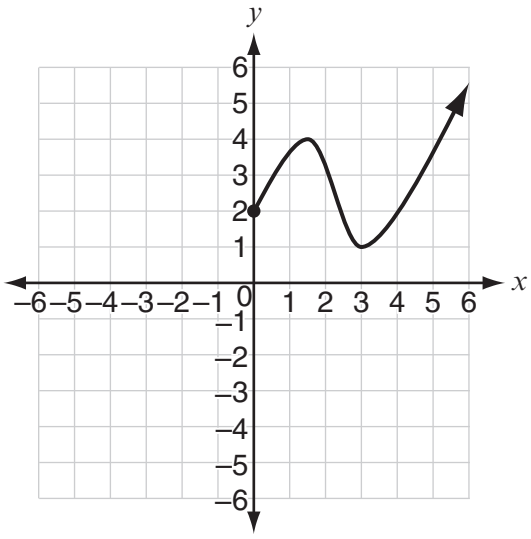
A. $x(5x + 6) = 5x^2 + 6x$

B. $(x + 3)^2 = x^2 + 6x + 9$

C. $(x + 2) + (x + 3) = 2x + 5$

D. $(x + 2)(x + 3) = x^2 + 5x + 6$

8 This coordinate plane shows the graph of a function.



What is the range of the function?

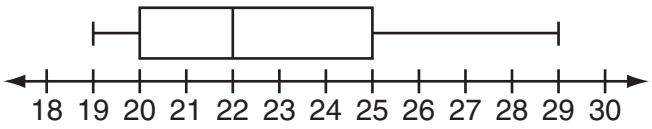
A. $y \geq 1$

B. $y \geq 2$

C. $x \geq 0$

D. $x \geq 3$

9 Andy recorded the number of points he scored in each basketball game he played last season. He used the data to make this box-and-whisker plot.



Number of Points per Game

Based on the box-and-whisker plot, which statement **must** be true?

A. Andy's mean score per game was 22 points.

B. Andy scored more than 25 points in only 1 game.

C. In the games he played, Andy's scores had a range of 5 points.

D. In at least half the games he played, Andy scored from 20 points to 25 points.

6 The first term in this pattern is $\frac{3}{5}$.

$$\mathbf{\frac{3}{5}, \frac{2}{5}, \frac{4}{15}, \frac{8}{45}, \cdots}$$

Which expression represents the 20th term in the pattern?

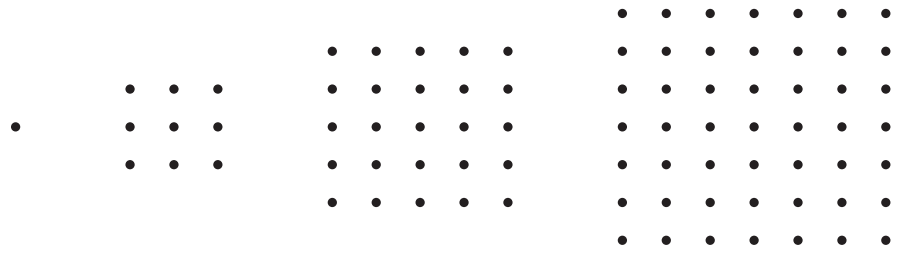
A. $\frac{3}{5} \cdot \left(\frac{2}{3}\right)^{19}$

B. $\frac{3}{5} \cdot \left(\frac{2}{3}\right)^{20}$

C. $\frac{3}{5} \cdot \left(\frac{2}{3} \cdot 19\right)$

D. $\frac{3}{5} \cdot \left(\frac{2}{3} \cdot 20\right)$

20 Look at this pattern.

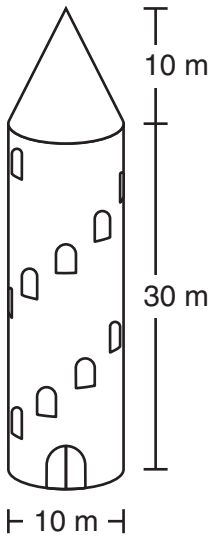


Term 1 Term 2 Term 3 Term 4

a. How many dots are in Term 6 of the pattern?

b. Write an expression using n that represents the number of dots in Term n of the pattern.

3 This diagram represents a tower. The tower is in the shape of a cone on top of a cylinder.



Which measurement is closest to the total volume of the tower?

A. 2,200 cubic meters

B. 2,600 cubic meters

C. 9,400 cubic meters

D. 10,500 cubic meters

14 Sketch a right triangle in which $\tan \theta = \frac{5}{12}$, where θ represents the measure of an angle of the triangle. Be sure to label θ and the right angle in your sketch.