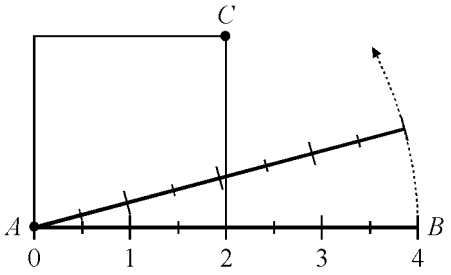
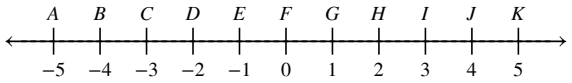
TEKS grade 8 A3

1. Imagine a square is drawn on a number line, as shown in the figure. The side of the square is 2. Now imagine that the number line is rotated counter-clockwise about point A, so that it intersects point C, the opposite corner of the square. Exactly where on the number line will point C be located?



A. $\sqrt{2}$ B. $\sqrt{3}$ C. $2\sqrt{2}$ D. $2\sqrt{3}$

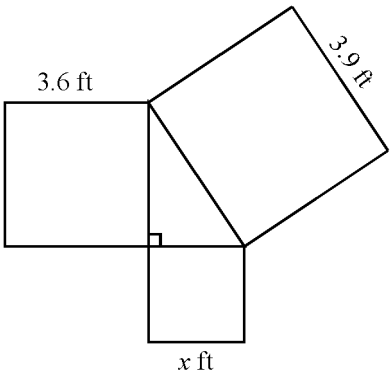
2. $\sqrt{10}$ is located between which of the letters on the number line?



A. B and C B. D and E

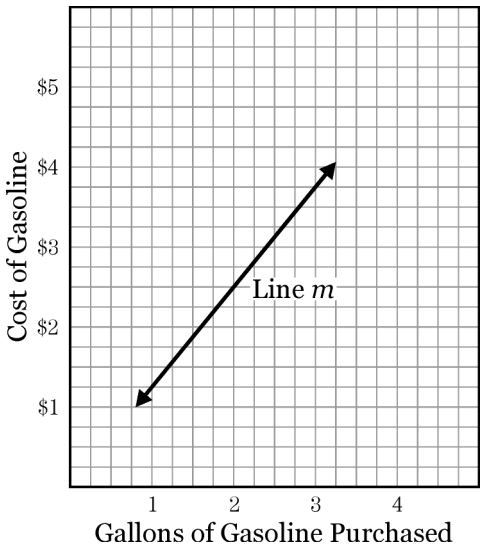
C. I and J D. J and K

3. Use the known lengths of the squares that form the right triangle to find the length x of the third square.



A. 15 ft B. 5 ft C. 1.5 ft D. 5.5 ft

4. Interpret the slope of line m if the slope is $\frac{5}{4}$.



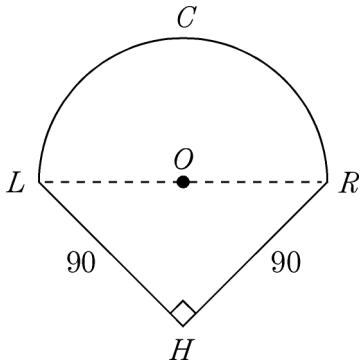
A. For every \$5 spent, you will receive 4 gallons of gasoline.

B. For every \$4 spent, you will receive 5 gallons of gasoline.

C. For every \$1 spent, you will receive 1.25 gallons of gasoline.

D. For each additional gallon you purchase, you will spend \$0.80.

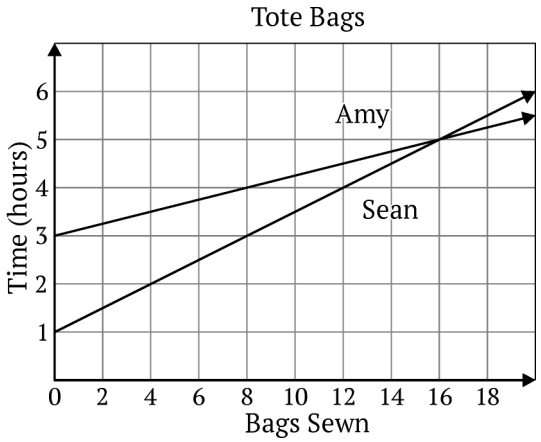
5. A baseball field is shaped as shown with semicircle $LORC$ adjoining $\triangle LHR$. If $LH = HR = 90$ feet, what is the approximate area of the field?



A. 10,411.7 ft^2 B. 14,461.7 ft^2

C. 29,496.9 ft^2 D. 54,943.8 ft^2

6. Amy and Sean sew tote bags as part of a club. The graph models the linear relationship between the time in minutes and the number of bags sewn for both people.



Amy and Sean want to sew 16 bags each. Which of the following statements is true?

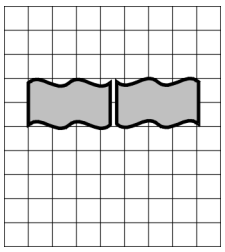
A. Amy would finish 1 hour before Sean.

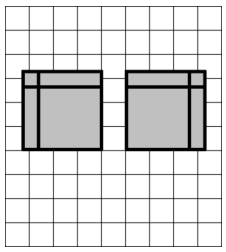
B. Sean would finish 1 hour before Amy.

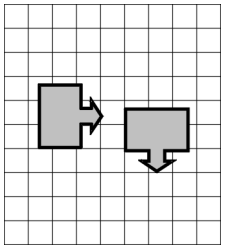
C. Amy and Sean would finish at the same time.

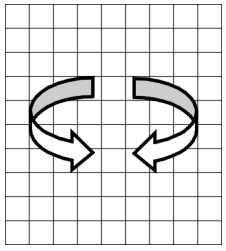
D. More information is needed.

7. Which pair of figures does *not* show a reflection?

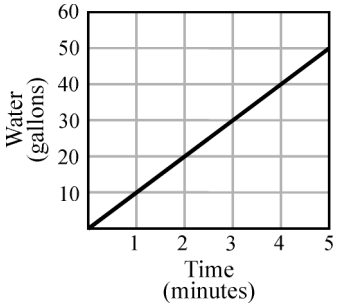
A. 

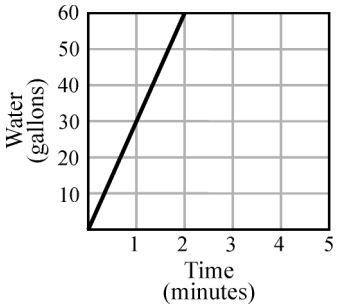
B. 

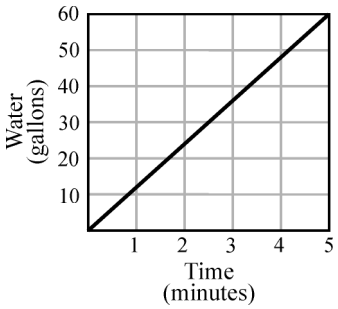
C. 

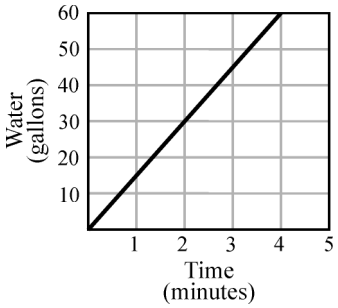
D. 

8. Which graph shows the water used by a sprinkler system that emits 12 gallons per minute?

A. 

B. 

C. 

D. 

9. Reflect the point $(-1, 2)$ across the line $x = 3$, then translate it vertically two units in the negative direction. What are the intermediate and the final coordinates, respectively?

A. $(-1, 4)$, $(-1, 2)$ B. $(-1, 4)$, $(-3, 4)$

C. $(5, 2)$, $(5, 0)$ D. $(7, 2)$, $(7, 0)$

10. The thrust that an engine produces is a function of altitude above sea level, as depicted in the equation

$$t = 8000 - 0.35a$$

where t is the thrust in pounds and a is the altitude above sea level in meters. What could be the meaning of 8000 in this equation?

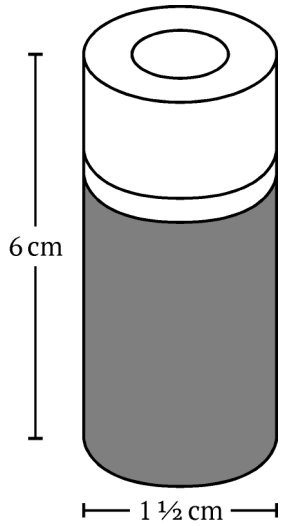
A. altitude where maximum thrust occurs

B. thrust output at sea level

C. thrust output as maximum altitude

D. altitude where thrust is zero

11. The dimensions of a cylindrical battery are shown below.



If the formula for the volume of a cylinder is $V = Bh$, which of the following can be used to find B, the area of the base of this battery in square centimeters?

A. $B = \pi(1\frac{1}{2})^2$

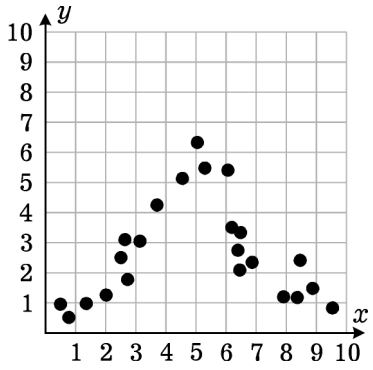
B. $B = \pi(\frac{3}{4})^2$

C. $B = \pi(3)$

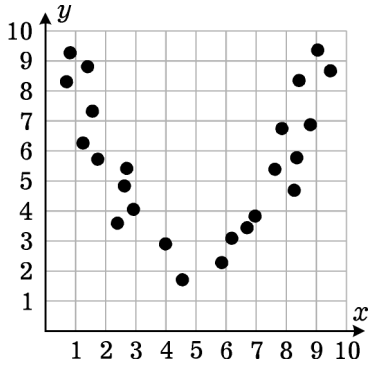
D. $B = \pi(1\frac{1}{2})(6)$

12. Below are four scatterplots. Which of them suggests a linear relationship between x and y?

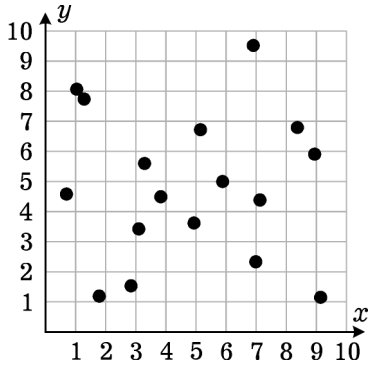
A.



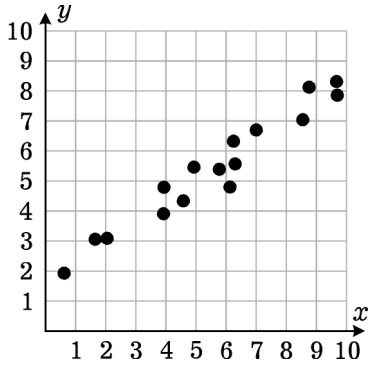
B.



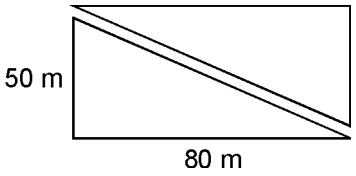
C.



D.



13.



A vacant lot measures 50 m by 80 m. The neighborhood kids have cut a diagonal path through the lot. The exact length of this path is $\sqrt{50^2 + 80^2}$ m. What is the approximate length of the path?

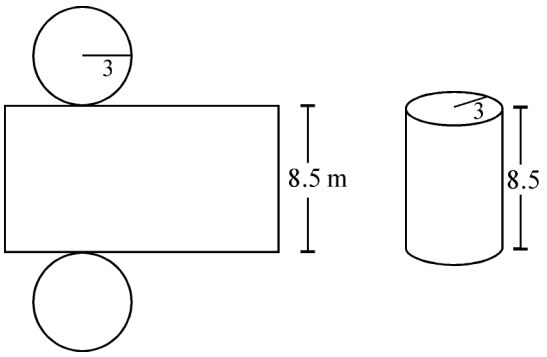
A. about 90 m

B. about 92 m

C. about 94 m

D. about 96 m

14. Ms. Caison has to sandblast a large cylindrical storage tank. The tank is $8\frac{1}{2}$ meters tall and has a radius of 3 meters, as shown in the figure.



What is the surface area of the tank, if the calculation is simplified by using the value $\pi = 3$?

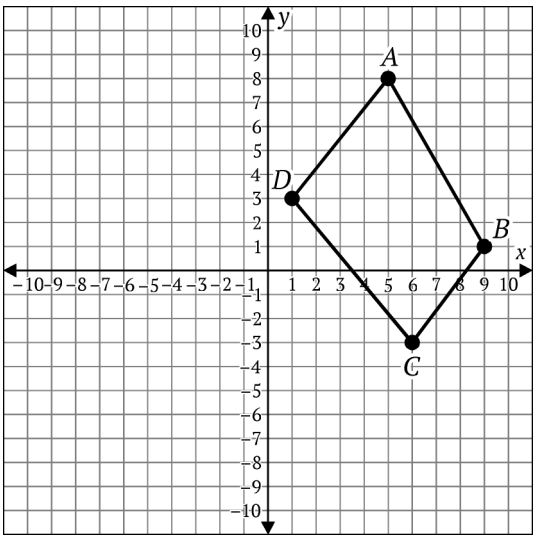
A. 105 square meters

B. 171 square meters

C. 207 square meters

D. 261 square meters

15. A student plots quadrilateral *ABCD* on the coordinate grid.



The student then transforms quadrilateral *ABCD* according to the rule $(x, y) \rightarrow (x + 2, y + 2)$ to create quadrilateral $A'B'C'D'$. Which statement is true?

A. The length of $A'B'$ is twice as many units as the length of AB.

B. The measure of $\angle B'C'D'$ is greater than the measure of $\angle BCD$.

C. The length of $B'C'$ is 4 more units than the length of BC.

D. The measure of $\angle C'D'A'$ is equal to the measure of $\angle CDA$.

16. A simulation can be used to estimate the probability that there will be 5 females out of a group of 8 people in the elevator. Select the best method of simulation.

A. rolling a die

B. spinning an 8-sector spinner

C. tossing a coin and rolling a die

D. drawing a card from a deck of playing cards

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1.
Answer: C
Objective: 8.02B
Points: 1

2.
Answer: C
Objective: 8.02B
Points: 1

3.
Answer: C
Objective: 8.07C
Points: 1

4.
Answer: A
Objective: 8.05D
Points: 1

5.
Answer: A
Objective: 8.07C
Points: 1

6.
Answer: C
Objective: 8.09
Points: 1

7.
Answer: C
Objective: 8.10A
Points: 1

8.
Answer: C
Objective: 8.04B
Points: 1

9.
Answer: D
Objective: 8.10A
Points: 1

10.
Answer: B
Objective: 8.05D
Points: 1

11.
Answer: B
Objective: 8.06A
Points: 1

12.
Answer: D
Objective: 8.05C
Points: 1

13.
Answer: C
Objective: 8.02B
Points: 1

14.
Answer: C
Objective: 8.07B
Points: 1

15.
Answer: D
Objective: 8.10A
Points: 1

16.
Answer: B
Objective: 8.11C
Points: 1