

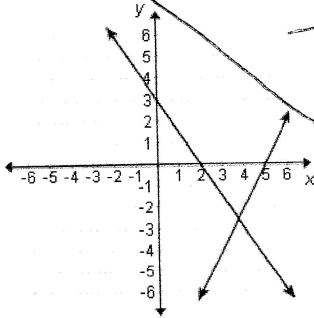
4th 9 Weeks Study Guide 2

1. Which graph represents the solution to the system of equations below?

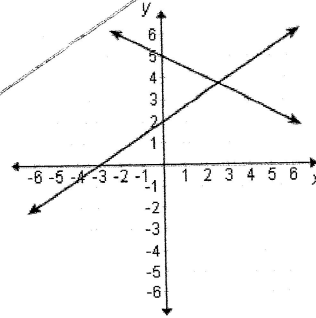
$$\begin{aligned} 2x + 3y &= 6 \\ -x + 2y &= 10 \end{aligned}$$

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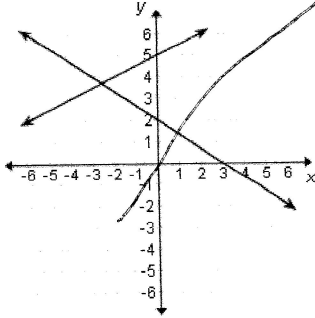
A.



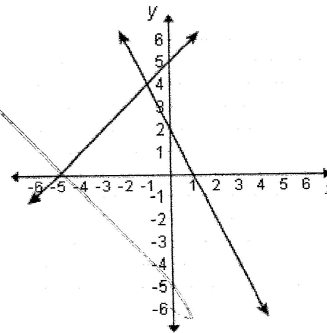
B.



C.



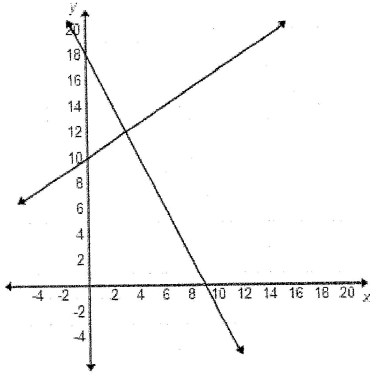
D.



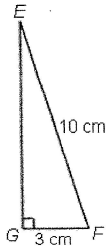
2. Admission to a neighborhood pool costs \$2.50 for children and \$4.50 for adults. The total number of children and adults that attended the pool for one day was 170. The total amount of money collected for the day was \$575. How many children and adults were at the pool?

- A. 65 children and 105 adults
- B. 75 children and 95 adults
- C. 95 children and 75 adults
- D. 105 children and 65 adults

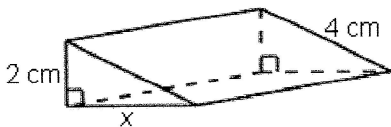
3. What is the solution to the system of equations below?



- A. (12, 3)
 B. (3, 12)
 C. (10, 0)
 D. (0, 10)
4. Find the length of \overline{EG} . Round to the nearest tenth of a centimeter.

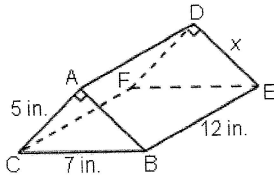


- A. 2.6 cm
 B. 3.7 cm
 C. 9.5 cm
 D. 10.4 cm
5. Sasha is using a glass right triangular prism for an experiment in science class and needs to cover one end of the prism with a piece of paper exactly the same size as the triangle. She knows the dimensions of two sides of the triangle, but needs to find the third side before she can cut out the piece of paper. If she has found the side length for the shortest side to be 2 cm and the longest side to be 4 cm, what is the length of the third side? Round to the nearest tenth of a centimeter.

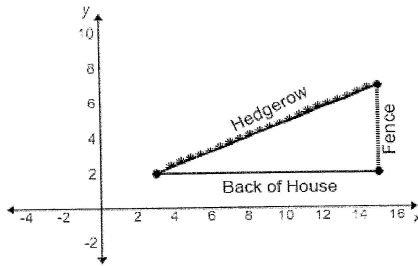


- A. 1.4 cm
 B. 2.0 cm
 C. 3.5 cm
 D. 4.5 cm

6. Find the length of \overline{DE} in the triangular prism pictured below. Round to the nearest tenth of an inch.



- A. 2.0 in.
 B. 4.9 in.
 C. 8.6 in.
 D. 10.9 in.
7. A landscape architect is using a coordinate plane to draft the layout for a new backyard hedgerow. The two ends of the hedgerow are located at (3, 2) and (15, 7). According to the architect's layout, what is the length of the new hedgerow? Use the Pythagorean Theorem.



- A. 13 units
 B. 5 units
 C. 12 units
 D. $\sqrt{17}$ units
8. Which of the following side lengths could be a right triangle.
 a) 12 in., 13 in., 19 in. b) 5 in., 13 in., 15 in.
 c) 10 in., 24 in., 26 in. d) 3 in., 4 in., 7 in.
9. Solve the system of equations by graphing.

$$y = -2x$$

$$y = x + 3$$

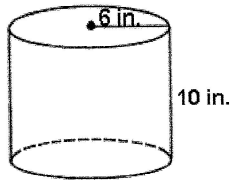
- A. (-1, 2)
 B. (-3, 0)
 C. (2, -1)
 D. (0, -3)

10. Solve the system of equations by graphing.

$$y = x + 2$$

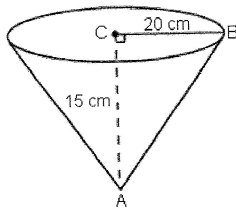
$$y = -2$$

- A. (2, -2)
B. (-4, -2)
C. (4, -2)
D. (-2, -2)
11. Andre has a cylindrical pitcher to use to fill his aquarium with water. The pitcher is 20 cm high and has a diameter of 6 cm. His aquarium holds about 4,000 cubic cm of water. Approximately how many times will Andre have to fill his pitcher in order to almost fill the aquarium?
- A. 2 times
B. 7 times
C. 10.6 times
D. 21.2 times
12. Find the volume of the cylinder pictured below. Round to the nearest tenth of a cubic inch and use 3.14 for π .



- A. 60.0 in³
B. 188.4 in³
C. 1,885.0 in³
D. 1,130.4 in³

13. Find the volume of the cone pictured below. Round to the nearest tenth of a cubic centimeter, and use 3.14 for π .



- A. 314.0 cm^3
B. $6,280.0 \text{ cm}^3$
C. $9,420.0 \text{ cm}^3$
D. $10,466.7 \text{ cm}^3$
14. A company supplies water coolers with paper cup dispensers. The cups in the dispensers are in the shape of a cone. The company wants to know how many cups should be given with each water cooler. The water cooler holds 1,848 cubic inches of water. The paper cups have a radius of 1.2 inches and a height of 5.5 inches. About how many cups should be given with each cooler if the cups will only be used once? Use 3.14 for π .
- A. 49 cups
B. 74 cups
C. 223 cups
D. 268 cups
15. Ponte Vedra High School has just installed a large swimming pool. The coach puts a spherical shaped buoy in the center of the pool for some practice exercises. If the radius of the buoy is 18 inches, what is the volume of the buoy?
- A. $72\pi \text{ in}^3$
B. $972\pi \text{ in}^3$
C. $7,776\pi \text{ in}^3$
D. $62,208\pi \text{ in}^3$

16. Henry and Ethan are trying to find the volume of a cylindrical water tank in their neighborhood. The tank has a height of 3 meters and a diameter of 12 meters. Their work is below.

Henry's Work:

$$\text{Volume} = (3.14)(3)(12)^2$$

$$\text{Volume} = (3.14)(3)(144)$$

$$\text{Volume} = 1,356.48$$

The volume of the tank is approximately $1,356 \text{ m}^3$.

Ethan's Work:

$$\text{Volume} = (3.14)(3)(6)^2$$

$$\text{Volume} = (3.14)(3)(36)$$

$$\text{Volume} = 339.12$$

The volume of the tank is approximately 339 m^3 .

Which boy is correct and why?

- A. Henry is correct. Ethan divided the diameter by two when he did not need to.
- B. Ethan is correct. Henry forgot to divide the diameter by two.
- C. Henry is correct. He multiplied the circumference of the base by the height.
- D. Ethan is correct. He multiplied the circumference of the base by the height.

17. Harper and Ella are trying to find the volume of a cone-shaped concrete tank. The tank has a radius of 6 feet and a depth of 10 feet. Their work is shown below.

Harper's Work

$$\text{Volume} = \left(\frac{1}{2}\right)(3.14)(6)^2(10)$$

$$\text{Volume} = \left(\frac{1}{2}\right)(3.14)(36)(10)$$

$$\text{Volume} = 565.2$$

The volume of the tank is approximately 565 ft^3 .

Ella's Work

$$\text{Volume} = \left(\frac{1}{3}\right)(3.14)(6)^2(10)$$

$$\text{Volume} = \left(\frac{1}{3}\right)(3.14)(36)(10)$$

$$\text{Volume} = 376.8$$

The volume of the tank is approximately 377 ft^3 .

Which of the following completely explains which girl is correct and why?

- A. Harper is correct. Ella multiplied by one-third when she should have multiplied by one-half.
- B. Ella is correct. Harper multiplied by one-half when she should have multiplied by one-third.
- C. Harper is correct. Ella not only multiplied by the wrong fraction, but she also rounded up when she should have rounded down.
- D. Ella is correct. Harper not only multiplied by the wrong fraction, but she also rounded down when she should have rounded up.