SAT2-MATHEMATICS Q&As

SAT Section 2: Mathematics

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QUESTION 1

$$\frac{3}{2+x}=\frac{x-5}{2x}$$

If the expression then one possible value of x could be

A. -1

B. -12

C. -5

D. 1

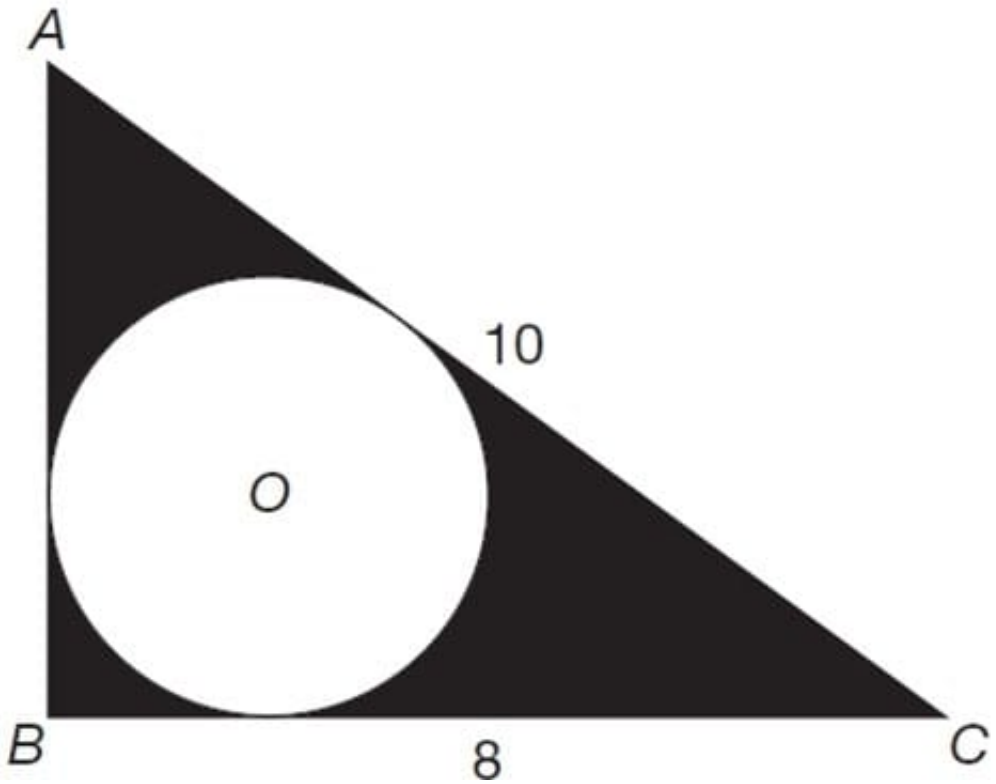
E. 2

Correct Answer: A

Cross multiply and solve for x:

$$3(2x)=(2+x)(x-5)$$
$$6x=x^2-3x-10$$
$$x^2-9x-10=0$$
$$(x-10)(x+1)=0$$
$$x=10,\ x-1$$

QUESTION 2



In the diagram above, triangle ABC is a right triangle and the diameter of circle O is 2/3 the length of AB. Which of the following is equal to the shaded area?

A. 20? square units

B. 24 – 4? square units

C. 24 – 16? square units

D. 48 – 4? square units

E. 48 – 16? square units

Correct Answer: B

Since ABC is a right triangle, the sum of the squares of its legs is equal to the square of the hypotenuse: (AB)2+82=102, (AB)2+ 64 = 100, (AB)2= 36, AB= 6 units. The diameter of circle O is 2/3 of AB, or 2/3(6) = 4 units. The area of a triangle is equal to 1/2bh where b is the base of the triangle and h is the height of the triangle.

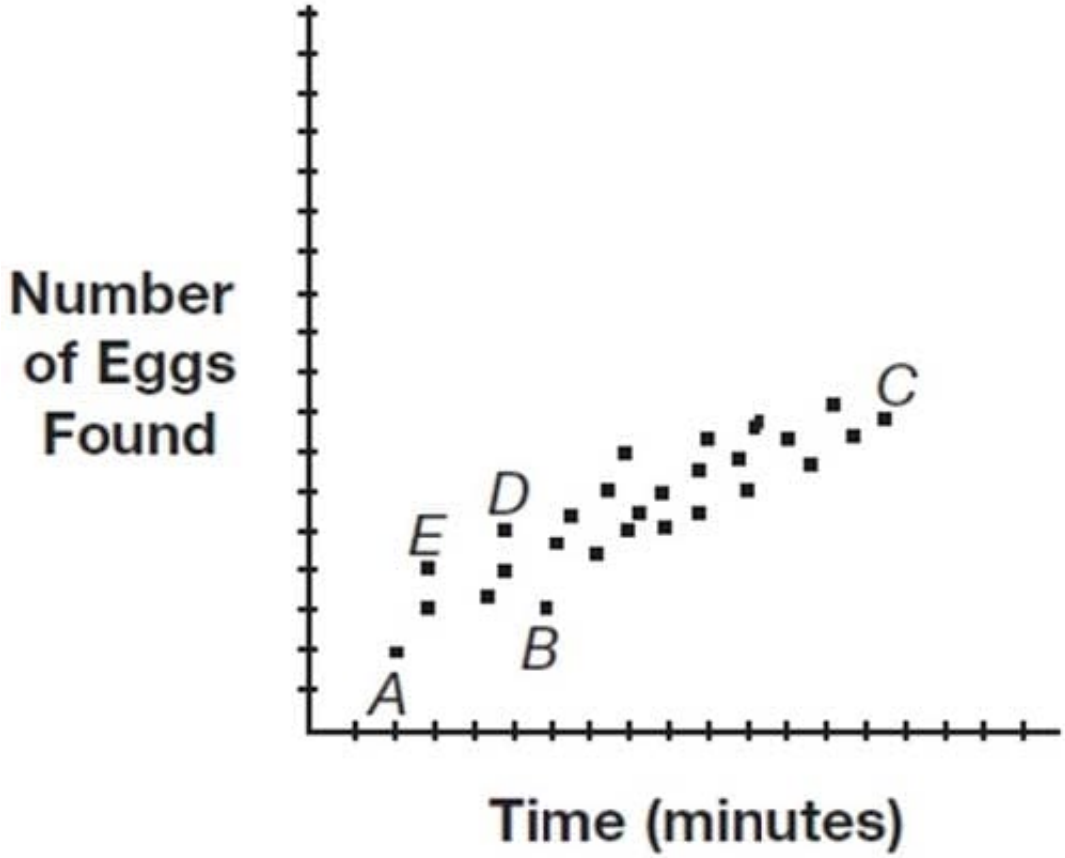
$$\frac{1}{2}(6)(8)=24$$

The area of ABC square units.

The area of a circle is equal to r2, where r is the radius of the circle. The radius of a circle is equal to half the diameter of the circle, so the radius of O is 1/2(4) = 2 units. The area of circle O = (2)2= 4. The shaded area is equal to the area of the triangle minus the area of the circle: 24 ?4 square units.

QUESTION 3

Eggs Found in a Hunt Over Time



The scatter plot above shows how many eggs were found in a hunt over time. Which of the labeled points represents a number of eggs found that is greater than the number of minutes that has elapsed?

A. A

B. B

C. C

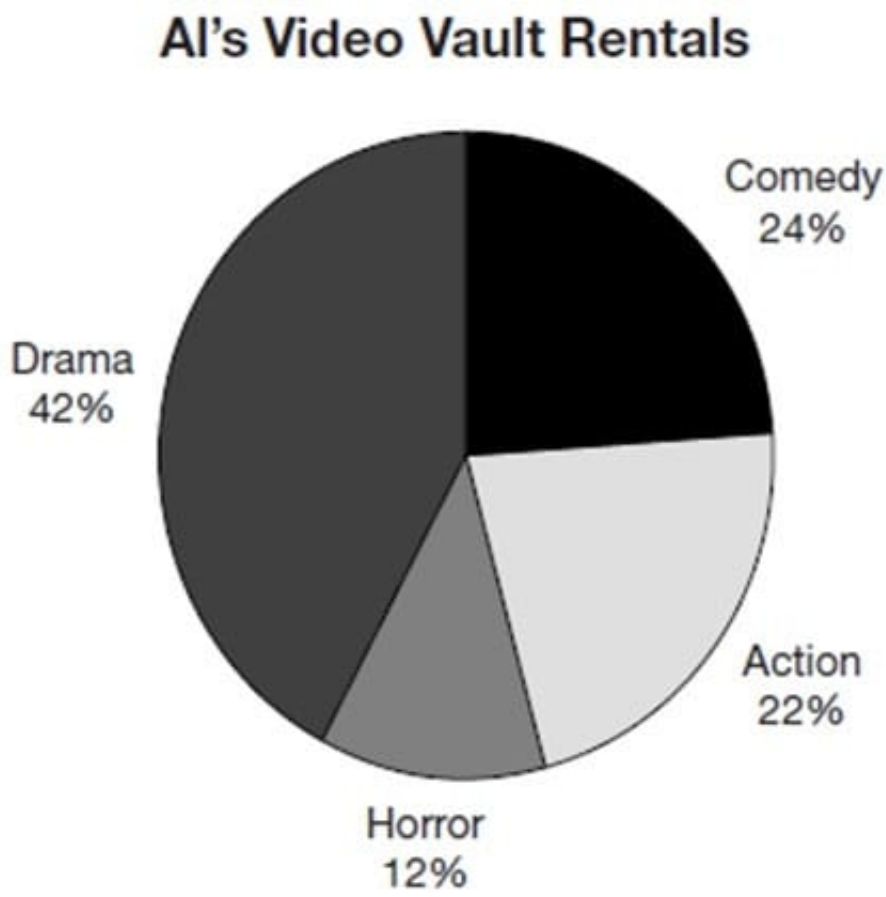
D. D

E. E

Correct Answer: E

The point that represents a number of eggs found that is greater than the number of minutes that has elapsed is the point that has a y value that is greater than its x value. Only point E lies farther from the horizontal axis than it lies from the vertical axis. At point E, more eggs have been found than the number of minutes that has elapsed.

QUESTION 4



The pie chart above shows the distribution of video rentals from Al\\'s Video Vault for a single night. If 250 videos were rented that night, how many more action movies were rented than horror movies?

A. 10

B. 20

C. 22

D. 25

E. 30

Correct Answer: D

Explanation:

22% of the movies rented were action movies; 250(0.22) = 55 movies; 12% of the movies rented were horror movies; 250(0.12) = 30 movies. There were 55 – 30 = 25 more action movies rented than horror movies.

QUESTION 5

$$y = \frac{2}{3}x - 5$$

Line is perpendicular to line

A. $y = \frac{2}{3}x + 5$

B. $y = 5 - \frac{2}{3}x$

C. $y = -\frac{2}{3}x - 5$

D. $y = \frac{3}{3}x - 5$

E. $y = -\frac{2}{3}x + 5$

A. Option A

B. Option B

C. Option C

D. Option D

E. Option E

Correct Answer: E

Explanation:

Perpendicular lines have slopes that are negative reciprocals of each other. The slope of the line given is 2/1.

The negative reciprocal of 2/1 is 1/2. Every line with a slope of -3/4 is perpendicular to the given line; y= 3/2x + i5 is perpendicular to y = 2/3x – i.