

SAT-PREP

SESSION 1

6/10

Bank time in the first 10 or so.

1

What is 10% of 470?

- A) 37
- B) 47
- C) 423
- D) 460

What is 10% of 470
 $x = .01 * 470 = 47$

10% of a number?
 move decimal point once
 10% of 3280 → 328

2

$$4x + 6 = 18$$

Which equation has the same solution as the given equation?

- A) $4x = 108$
- B) $4x = 24$
- C) $4x = 12$
- D) $4x = 3$

$4x + 6 = 18$
 $-6 \quad -6$
 $4x = 12$

3

The total cost, in dollars, to rent a surfboard consists of a \$25 service fee and a \$10 per hour rental fee. A person rents a surfboard for t hours and intends to spend a maximum of \$75 to rent the surfboard. Which inequality represents this situation?

- A) $10t \leq 75$
- B) $10 + 25t \leq 75$
- C) $25t \leq 75$
- D) $25 + 10t \leq 75$

$10t + 25$

4

The function g is defined by $g(x) = x^2 + 9$. For which value of x is $g(x) = 25$?

- A) 4
- B) 5
- C) 9
- D) 13

$g(x) = x^2 + 9$
 $25 = x^2 + 9$
 $-9 \quad -9$
 $\sqrt{16} = \sqrt{x^2}$
 $x = 4 \text{ or } -4$

5

Each face of a fair 14-sided die is labeled with a number from 1 through 14, with a different number appearing on each face. If the die is rolled one time, what is the probability of rolling a 2?

- A) $\frac{1}{14}$
- B) $\frac{2}{14}$
- C) $\frac{12}{14}$
- D) $\frac{13}{14}$

prob = $\frac{\# \text{ of desired events}}{\text{tot } \# \text{ of events}}$
 $\frac{1}{14}$

6

A printer produces posters at a constant rate of 42 posters per minute. At what rate, in posters per hour, does the printer produce the posters?

$\frac{42 \text{ posters}}{1 \text{ min}} * \frac{60 \text{ min}}{1 \text{ hr}} = \frac{2520 \text{ posts}}{\text{hour}}$

7

The function f is defined by the equation $f(x) = 7x + 2$. What is the value of $f(x)$ when $x = 4$?

$$f(4) = 7(4) + 2$$

$$28 + 2 = \boxed{30}$$

8

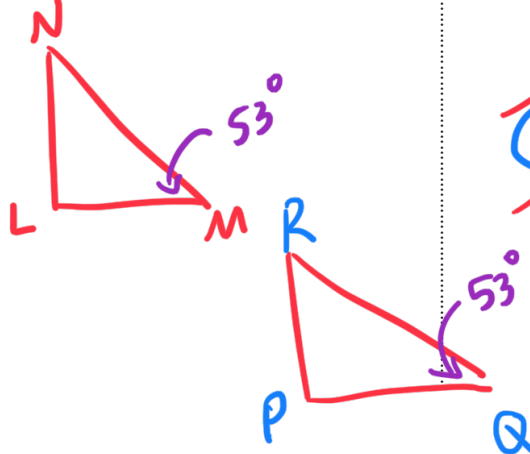
A teacher is creating an assignment worth 70 points. The assignment will consist of questions worth 1 point and questions worth 3 points. Which equation represents this situation, where x represents the number of 1-point questions and y represents the number of 3-point questions?

- A) $4xy = 70$
 - B) $4(x + y) = 70$
 - C) $3x + y = 70$
 - D) $x + 3y = 70$
- \downarrow \downarrow
 1 3

9

Right triangles LMN and PQR are similar, where L and M correspond to P and Q , respectively. Angle M has a measure of 53° . What is the measure of angle Q ?

- A) 37°
- B) 53°
- C) 127°
- D) 143°



10

$$y = -3x$$

$$4x + y = 15$$

The solution to the given system of equations is (x, y) . What is the value of x ?

- A) 1
- B) 5
- C) 15
- D) 45

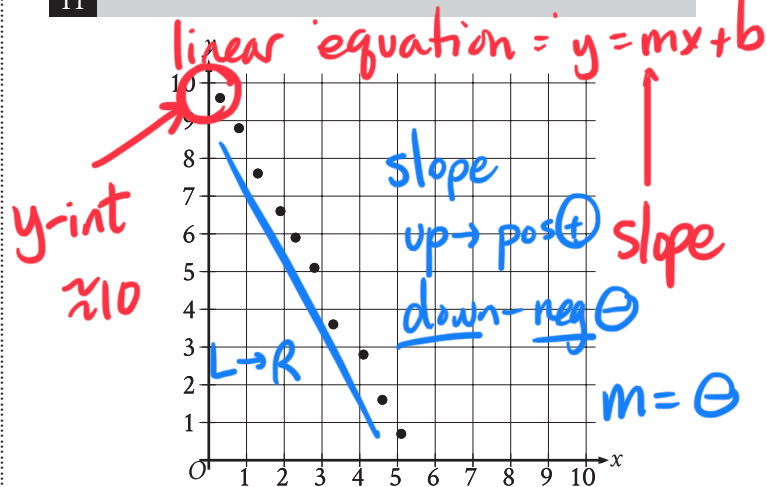
$$4x + y = 15$$

$$4x - (3x) = 15$$

$$\boxed{x = 15}$$

y-int

11

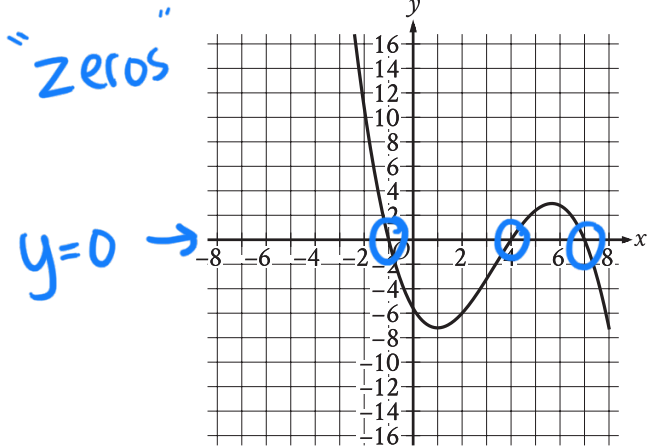


Which of the following equations is the most appropriate linear model for the data shown in the scatterplot?

- A) $y = -1.9x - 10.1$
- B) $y = -1.9x + 10.1$
- C) $y = 1.9x - 10.1$
- D) $y = 1.9x + 10.1$

$$y = mx + b$$

12



The graph of $y = f(x)$ is shown, where the function f is defined by $f(x) = ax^3 + bx^2 + cx + d$ and a , b , c , and d are constants. For how many values of x does $f(x) = 0$?

- A) One
B) Two
C) Three
D) Four

$f(x) = ax^3 + bx^2 + cx + d$
up to 3 zeros

13

Vivian bought party hats and cupcakes for \$71. Each package of party hats cost \$3, and each cupcake cost \$1. If Vivian bought 10 packages of party hats, how many cupcakes did she buy?

party hats $\rightarrow p$ cupcakes $\rightarrow c$

$$\$3p + \$1c = \$71$$

$$3p + c = 71$$

$$3(10) + c = 71$$

$$30 + c = 71$$

$$\begin{array}{r} -30 \\ \hline c = 41 \end{array}$$

14

$$z^2 + 10z - 24 = 0$$

What is one of the solutions to the given equation?

15

Bacteria are growing in a liquid growth medium. There were 300,000 cells per milliliter during an initial observation. The number of cells per milliliter doubles every 3 hours. How many cells per milliliter will there be 15 hours after the initial observation?

- A) 1,500,000
B) 2,400,000
C) 4,500,000
D) 9,600,000

16

Which expression is equivalent to $6x^8y^2 + 12x^2y^2$?

- A) $6x^2y^2(2x^6)$
B) $6x^2y^2(x^4)$
C) $6x^2y^2(x^6 + 2)$
D) $6x^2y^2(x^4 + 2)$