

1

$$x + y = 75$$

The equation above relates the number of minutes, x , Maria spends running each day and the number of minutes, y , she spends biking each day. In the equation, what does the number 75 represent?

- A) The number of minutes spent running each day
- B) The number of minutes spent biking each day
- C) The total number of minutes spent running and biking each day ✓
- D) The number of minutes spent biking for each minute spent running

2

Which of the following is equivalent to $3(x + 5) - 6$?

- A) $3x - 3$
- B) $3x - 1$
- C) $3x + 9$
- D) $15x - 6$

$$3x + 15 - 6$$

$$\underline{3x + 9}$$

3

$$x = y - 3$$

$$\frac{x}{2} + 2y = 6$$

Which ordered pair (x, y) satisfies the system of equations shown above?

A) $(-3, 0)$

B) $(0, 3)$

C) $(6, -3)$

D) $(36, -6)$

$$\left(\frac{y-3}{2} + 2y = 6 \right) \cdot 2$$

$$y-3 + 4y = 12$$

$$5y - 3 = 12$$

$$5y = 15 \rightarrow y = 3$$

4

Which of the following complex numbers is equal to

$$(5 + 12i) - (9i^2 - 6i), \text{ for } i = \sqrt{-1} ?$$

A) $-14 - 18i$

B) $-4 - 6i$

C) $1 + 6i$

D) $14 + 18i$

$$i = \sqrt{-1}$$

$$i^2 = -1$$

$$5 + 12i + 9 + 6i$$

$$= 14 + 18i$$

$$1) (2 - 3i) - (5i + 2i^2) \quad i^2 = -1$$

$$= 2 - 3i - 5i + 2 = 4 - 8i$$

$$2) (3 + 2i)(4 - i)$$

$$= 12 - 3i + 8i - 2i^2$$

$$= 12 - 3i + 8i + 2$$

$$= 14 + 5i$$

5

If $f(x) = \frac{x^2 - 6x + 3}{x - 1}$, what is $f(-1)$?

A) -5

B) -2

C) 2

D) 5

$$\frac{(-1)^2 - 6(-1) + 3}{(-1) - 1} = \frac{1 + 6 + 3}{-2}$$

$$= \frac{10}{-2} = -5$$

6

A company that makes wildlife videos purchases camera equipment for \$32,400. The equipment depreciates in value at a constant rate for 12 years, after which it is considered to have no monetary value. How much is the camera equipment worth 4 years after it is purchased?

- A) \$10,800
- B) \$16,200
- C) \$21,600
- D) \$29,700

$$\frac{32400}{12} \cdot 4 = \underline{10800}$$

$$\begin{array}{r} 32400 \\ -10800 \\ \hline 21600 \end{array}$$