



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) $15x - 6$

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) $(36, -6)$

4

Which of the following complex numbers is equal to $(5 + 12i) - (9i^2 - 6i)$, for $i = \sqrt{-1}$?

- A) $-14 - 18i$
- B) $-4 - 6i$
- C) $4 + 6i$
- D) $14 + 18i$



5

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

- A) -5
- B) -2
- C) 2
- D) 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

7

$$x^2 + 6x + 4$$

Which of the following is equivalent to the expression above?

- A) $(x + 3)^2 + 5$
- B) $(x + 3)^2 - 5$
- C) $(x - 3)^2 + 5$
- D) $(x - 3)^2 - 5$

8

Ken is working this summer as part of a crew on a farm. He earned \$8 per hour for the first 10 hours he worked this week. Because of his performance, his crew leader raised his salary to \$10 per hour for the rest of the week. Ken saves 90% of his earnings from each week. What is the least number of hours he must work the rest of the week to save at least \$270 for the week?

- A) 38
- B) 33
- C) 22
- D) 16