**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) $15x - 6$

$3X+15-6$

$3X+9$

**3**

$$x = y - 3$$
$$\frac{x}{2} + 2y = 6 \rightarrow \quad x + 4y = 12$$

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

A) $(-3, 0)$

B) $(0, 3)$

C) $(6, -3)$

D) $(36, -6)$

$$y - 3 + 4y = 12$$
$$5y - 3 = 12$$
$$5y = 15 \quad \boxed{y = 3}$$

**4**

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

$$i^2 = -1$$

A) $-14 - 18i$

B) $-4 - 6i$

C) $4 + 6i$

D) $14 + 18i$

$$5 + 12i - (-9 - 6i)$$
$$5 + 12i + 9 + 6i$$
$$14 + 18i$$

5

If $f(x) = \dfrac{x^2 - 6x + 3}{x - 1}$, 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

$y = mx + b$

$$\frac{32400}{12} = 2700$$

$$32400 - 4(2700)$$

**7**

$$x^2 + 6x + 4$$
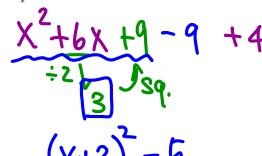
Which of the following is equivalent to the expression above?

A) $(x+3)^2 + 5$

B) $(x+3)^2 - 5$

C) $(x-3)^2 + 5$

D) $(x-3)^2 - 5$

$$X^2 + 6X + 9 - 9 + 4$$

$\div 2 \rightarrow \boxed{3} \quad \text{sq.}$

$$(X+3)^2 - 5$$

**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

$E = 300$

$= 8 \cdot 10 + 10 \cdot t$

$300 = 80 + 10t$

$\cdot 9 \, E = \dfrac{270}{.9}$

$220 = 10t$

$22 = t$