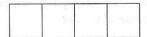
Exercise Set 5 (No Calculator)

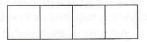
1

If 3x + 2y = 72, and y = 3x, what is the value of x?



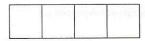
2

If 2a - 7b = 10 and 2a + 7b = 2, what is the value of $4a^2 - 49b^2$?



3

If the lines y = -4x - 3 and y = -3x - b intersect at the point (-1, c), what is the value of b?



4

If the lines 4x + 5y = 13 and 4y + kx = 2 are parallel, what is the value of k?



5

If the lines 4x + 5y = 13 and 6y - kx = 6 are perpendicular, what is the value of k?



6

$$\frac{2a}{b} = \frac{1}{3}$$
 $\frac{c}{b} + 1 = \frac{5}{3}$

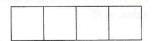
Based on the system of equations above, what is the value of $\stackrel{a}{=}$?

-



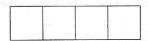
7

If ab = -4 and abc = 12, what is the value of $\frac{c}{ab}$?



8

If a and b are constants and the graphs of the lines 2x - 3y = 8 and ax + by = 2 are perpendicular, then what is the value of $\frac{3a}{b}$?



9

$$5x - y = 11$$
$$2x - 2y = 9$$

Based on the system of equations above, what is the value of 3x + y?

- A) -2
- B) 0
- C) 2
- D) 4

10.

Two numbers have a difference of 4 and a sum of -7. What is their product?

- A) -33
- B) -10.25
- C) 8.25
- D) 10.25

11

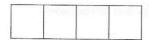
It costs Emma p dollars to make each of her custom bracelets, which she sells for m dollars apiece. She makes a profit of \$60 if she makes and sells 5 of these bracelets, but she only makes a profit of \$10 if she makes 5 bracelets but only sells 4 of them. How much does it cost Emma to make each bracelet?

- A) \$36
- B) \$38
- C) \$48
- D) \$50

Exercise Set 5 (Calculator)

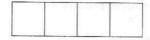
12

If 2y = x + 1 and 4x + 6y = 0, then y =



13

If $6x + 7y = \frac{4}{5}$ and $6x - 7y = \frac{6}{5}$, then y =



$$2x - 5y = 20$$

$$10x - 25y = 4k$$

14

For what value of k does the system of equations above have at least one solution?



15

At the beginning of the week, the ratio of cats to dogs at Glenna's Pet Store was 4 to 5. By the end of the week, the number of cats had doubled, while the number of dogs had increased by 12. If the ratio of cats to dogs at the end of the week was 1 to 1, how many cats did the store have at the <u>beginning</u> of the week?



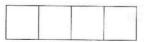
16

Jenny originally had twice as many friendship bracelets as Emilie. After Jenny gave Emilie 5 of her friendship bracelets, Jenny still had 10 more than Emilie. How many friendship bracelets did Jenny have originally?



17

The average (arithmetic mean) of x and y is 14. If the value of x is doubled and the value of y is tripled, the average (arithmetic mean) of the two numbers remains the same. What is the value of x?



18

$$7m + 10n = 7$$

$$6m + 9n = 1$$

Based on the system of equations above, what is the value of 4m + 4n?



19

In the *xy*-plane, perpendicular lines a and b intersect at the point (2, 2). If line a contains the point (7, 1), which of the following points is on line b?

- A) (0, 1)
- B) (4, 5)
- C) (7, 3)
- D) (3, 7)

20

Which of the following pairs of equations has no solution in common?

- A) 2x 3y = 1 and 6x 9y = 3
- B) y = 4x and y = -4x
- C) 2x 3y = 1 and 6x 9y = 2
- D) y = 4x and 2y 8x = 0

21

In the *xy*-plane, the line *l* is perpendicular to the line described by the equation $\frac{1}{x} + \frac{1}{2y} = \frac{1}{y}$. What is the slope of line *l*?

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