1.

$$x + y = 10$$
$$x - y = 8$$

If (x_1, y_1) is the solution to the system of equations above, what is the value of y_1 ?

A) 9

B) 2

C) 1

D) −1

2.

$$x + y = 7$$
$$2x + y = 2$$

The ordered pair (x, y) satisfies the system of equations above. What is the value of x ?

A) -5

B) 3

C) 5

D) 9

3.

$$x+2y=11$$
$$x-2y=3$$

If (x, y) is the solution to the given system of equations, what is the value of x?

A) 3

B) 7

C) 12

D) 14

4.

$$D = 60 - \frac{3}{4}P$$

$$S = \frac{1}{4}P$$

In economics, the equilibrium price is defined as the price at which quantity demanded and quantity supplied are equal. If the quantity demanded, D, and quantity supplied, S, in terms of the price in dollars, P, are given by the equations above, what is the equilibrium price?

A) $0

B) $60

C) $80

D) $120

5.

If $x + 2y = 500$ and $3x - 4y = 875$, what is the value of y ?

6.

$$4x + 3y = 11$$
$$3x + 2y = 7$$

Which ordered pair, (x, y), is the solution to the system of equations above?

A) $(5, -1)$

B) $(3, 1)$

C) $(1, 2)$

D) $(-1, 5)$

7.

$$y = 2x$$
$$y = 12 - x$$

If (x, y) is the solution to the system of equations above, what is the value of $2(x + y)$?

8.

If $x + y = 13$ and $x - y = 2$, what is the value of $x^2 - y^2$?

A) 4

B) 26

C) 121

D) 165

9.

$$x + 2y = 16$$
$$0.5x - y = 10$$

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

A) -2

B) 2

C) 18

D) 36

10.

$$2x + y = 4$$
$$6x + 5y = 16$$

If (x, y) is the solution to the given system of equations, what is the value of y ?

A) -4

B) 1

C) 2

D) 4

11.

$$x^2 - 6x + 11 = y$$
$$x = y + 1$$

The system of equations above is graphed in the xy-plane. Which of the following is the y-coordinate of an intersection point (x, y) of the graphs of the two equations?

A) -4

B) -2

C) 2

D) 4

12.

Which of the following ordered pairs (x, y) satisfies both of the equations $y = x^2 - 8x + 11$ and $y = -2x + 6$?

A) $(-1, 8)$

B) $(0, 11)$

C) $(1, -4)$

D) $(5, -4)$

13.

$$3x = y$$
$$3x = 36 - y$$

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

A) 9

B) 12

C) 15

D) 18

14.

$$x + y = 7$$
$$x - y = 1$$

If (x, y) is the solution to the system of equations above, what is the value of x ?

15.

$$6x + y = 3$$
$$y = 5x + 1$$

In the solution (x, y) to the system of equations above, what is the value of x ?

16.

$$5x + 2y = 40$$
$$5x + 4y = 60$$

If (x, y) is the solution to the system of equations above, what is the value of y ?

A) 5

B) 10

C) 15

D) 20

17.

Students and teachers from Pine Brook Elementary School are going on a field trip to the zoo. Admission to the zoo will cost $7.50 for each student and $12 for each adult. It will cost a total of $681 for all 86 people on the field trip for admission to the zoo. How many students are going on the field trip?

A) 29

B) 70

C) 78

D) 91

18.

If $y = 6x + 8$ and $3x + 2y = 46$, what is the value of $x + y$?

19.

$$y = 5x + 1$$

$$y = x^2 + 3x + 2$$

What is the y-coordinate of the point of intersection, in the xy-plane, of the graphs of the equations above?

A) 1

B) 2

C) $\frac{9}{4}$

D) 6

20.

$$10x + 4y = 16$$
$$5x + 8y = 20$$

If (x, y) is the solution to the system of equations above, what is the value of $15x + 12y$?

21.

$$y = 10$$
$$y = x + 4$$

If (x, y) is the solution to the given system of equations, what is the value of x ?

22.

$$3x + y = 29$$
$$x = 2$$

If (x, y) is the solution to the given system of equations, what is the value of y?

23.

$$y = 3x$$
$$5x - 4y = -21$$

The system of equations above has solution (x, y). What is the value of $x + y$?

A) 12

B) 9

C) 6

D) 3

24.

$$5x - 2y = 8$$
$$x = 2y$$

What is the value of x in the system of equations above?

25.

$$x - 2y = 3$$
$$2x - 2y = 8$$

The ordered pair (x, y) satisfies the system of equations above. What is the value of x ?

26.

Isabella sells only rings and necklaces on her website. Rings sell for $50 each, and necklaces sell for $30 each. If Isabella sold 25 pieces of jewelry and her sales totaled $1050, how many necklaces did Isabella sell?

27.

$$2x - 3y = 22$$
$$-4x + 5y = -66$$

If (x, y) is the solution of the system above, what is the value of y ?

28.

An alloy is made by melting and combining two or more metals. A metalsmith has two alloys, each containing different amounts of silver, that will be melted and combined to form another alloy. Every 10 grams of alloy A contains 2 grams of silver, and every 10 grams of alloy B contains 7 grams of silver. To obtain 100 grams of an alloy that contains 50 grams of silver, how many grams of alloy A should be combined with alloy B?

A) 35

B) 40

C) 60

D) 65

29.

$$2.4x - 1.5y = 0.3$$
$$1.6x + 0.5y = -1.3$$

The system of equations above is graphed in the xy-plane. What is the x-coordinate of the intersection point (x, y) of the system?

A) −0.5

B) −0.25

C) 0.8

D) 1.75

30.

$$y = x^2 - 4x + 2$$
$$y = 3x - 10$$

Based on the system of equations above, which of the following is a possible value of xy ?

A) -12

B) 3

C) 7

D) 8

31.

$$4x + 6y = 20$$
$$y = -8$$

If (x, y) is the solution to the system of equations above, what is the value of x ?

32.

$$6x - 7y = -24$$
$$2x + 5y = 14$$

The ordered pair (x, y) is a solution to the system of equations above. What is the value of $\frac{y}{x}$?

A) -6

B) $-\frac{7}{2}$

C) $-\frac{1}{2}$

D) 3

33.

$$2x+3y=1200$$
$$3x+2y=1300$$

Based on the system of equations above, what is the value of $5x+5y$?

34.

$$x + 2y = 1$$
$$2x - y = 1$$

If (x, y) is the solution to the system of equations above, what is the value of y?

35.

$$4x - 8y = 1$$
$$12x + 4y = 10$$

If (x, y) is the solution to the system of equations above, what is the value of x?

36.

$$y=3x$$
$$5x-4y=-21$$

The system of equations above has solution (x, y). What is the value of $x+y$?

A) 12

B) 9

C) 6

D) 3

37.

At a coffee shop, Don combined arabica beans with robusta beans to make a coffee bean blend. The arabica beans cost $13.50 per pound, and the robusta beans cost $9.25 per pound. He used 1.2 pounds of robusta beans in the blend, and the total cost of the blend was $21.90. How many pounds of arabica beans did Don use in the blend?

38.

$$x + 2y = -6$$
$$2x - y = 8$$

If the solution to the system of equations above is (x, y), what is the value of $x - 3y$?

39.

$$y = 8x$$
$$y = x^2 + 16$$

If (x, y) is the solution of the system of equations above, what is the value of x ?

40.

When Michael swims he burns 9 calories per minute, and when he walks he burns 4 calories per minute. If Michael spends a total of 4 hours walking and swimming and burns a total of 1600 calories, how many minutes did he spend walking?