Worksheet-4

MTH-05: Elementary Algebra (Systems of Linear Equations and Inequalities)

First Name: ....

Last Name: ....

1) Solve the following system by graphing and give the x-value of the solution :
$L_1 : x - y = -4$ and $L_2 : 2x + y = 1$

   a) 3

   b) 1

   c) -3

   d) -1

2) Determine the **number** of solutions without graphing :
$2x + y = 3$ and $x + 3y = 4$

   a) One Solution

   b) No Solution

   c) Infinite number of solutions

   d) Can not be determined

3) Determine the **number** of solutions without graphing :
$4y = -x + 7$ and $2x + 8y = 9$

   a) One Solution

   b) No Solution

   c) Infinite number of solutions

   d) Can not be determined

4) Determine the **number** of solutions without graphing :
$y + 2x = 7$ and $2y - 14 = -4x$

   a) One Solution

   b) No Solution

   c) Infinite number of solutions

   d) Can not be determined

5) Solve the system by substitution : $x = 3y + 7$ and $x = 2y + 15$

   a) (31, 8)

   b) (-17, 8)

   c) (-31, -8)

   d) (-17, -8)

6) Solve the system by substitution : $2x - 3y = 11$ and $x = 4y + 9$

   a) $\left[\dfrac{17}{5} , \dfrac{7}{5} \right]$

   b) $\left[\dfrac{17}{5} , - \dfrac{7}{5} \right]$

   c) $\left[- \dfrac{17}{5} , \dfrac{7}{5} \right]$

   d) $\left[- \dfrac{7}{5} , - \dfrac{7}{5} \right]$

7) Solve the system by substitution :
$3x + 2y = 11$ and $y = x + 3$

a)(1, 4)

b)(-1, 4)

c) (1, -4)

d)(-1, -4)

8) Solve the system by substitution.
Give the x-value of the solution.
$y + 4x = 0$ and $x = -11 - 3y$

a)11

b)1

c)8

d)-11

9) Solve the following system and identify whether it is dependent or inconsistent.
$x - 3y = 5$ $9y = 3x + 1$

a)Inconsistent

b)Dependent

10) Solve by addition : $x + y = 9$ and $x - y = 5$

a)(1, 1)

b)(5, -7)

c) (1, 5)

d)(7, 2)

11) Solve the system by addition. Give the x-value of the solution.
$2x + 4y = 2$ and $-2x + y = 8$

a)0

b)3

c)2

d)-3

12) Solve the system by addition.
Give the y-value of the solution.
$8x + 2y = 6$ and $3x - 2y = -6$

a)0

b)3

c)2

d)-3

13) Solve the system by addition. Give the x-value of the solution.
$7x - 4y = -16$ and $-3x + 5y = -3$

a)-4

b)-1

c)1

d)4

14) Solve the system by addition.
Give the y-value of the solution.
$2x + 5y = 8$ and $5x - 2y = -9$

a)-2

b)-1

c)2

d)1

15) Solve the system. Give the x-value of the solution.
$4x + 2y = 10$ and $-16x + 8y = 40$

a) -6

b) 0

c) No Solution

d) Infinite number of solutions

16) Graph the solution of the linear system:

$$3x + 4y \geq 12$$
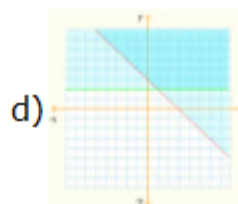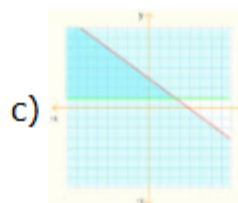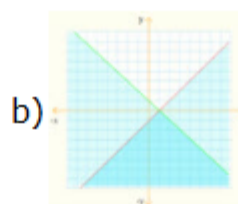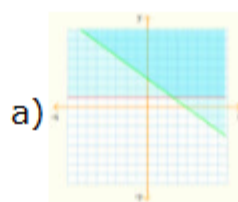$$y \geq 1$$

a)

b)

c)

d)

17) Solve the problem by writing a system of equations in two variables and then solving it. The sum of two numbers is 17. If the larger number is two more than twice the smaller find the larger number.

a) 5

b) 9

c) 36

d) 12

18) The perimeter of a rectangle is 30 feet. The difference between the length and the width is 1 foot. Find the width.

a) 9 ft

b) 6 ft

c) 8 ft

d) 7 ft

19) The sum of two numbers is 89. Three times the smaller number exceeds the larger number by 71. Find the numbers.

a) 40,49

b) 53,36

c) 9,98

d) 6,83

20) A pile of 23 coins consists of nickels and dimes. The total value of the coins is $1.40. Find the number of each type of coin.

a) nickels=22, dimes=1

b) nickels=8, dimes=10

c) nickels=18, dimes=5

d) nickels=23, dimes=5

Form A

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Answer Keys

1) d)-1

2) a)One Solution

3) b)No Solution

4) c)Infinite number of solutions

5) a)(31, 8)

6) b) $\left[\dfrac{17}{5}, -\dfrac{7}{5}\right]$

7) a)(1, 4)

8) b)1

9) a)Inconsistent

10) d)(7, 2)

11) d)-3

12) b)3

13) a)-4

14) c)2

15) b)0

16) a)

17) d)12

18) d)7 ft

19) a)40,49

20) c)nickels=18, dimes=5