

Worksheet-3

MTH-05: Elementary Algebra (Linear Equations / Inequalities in Two Variables)

First Name:

Last Name:

1) The ordered pair (3, -1) is a solution of $5y + 2x = 1$. Which of the following is true ?

a) x -Coordinate = 2, y -Coordinate = 1

b) x -Coordinate = 5, y -Coordinate = 2

c) x -Coordinate = 3, y -Coordinate = -
1

d) x -Coordinate = -1, y -Coordinate =
3

3) Find the ordered pairs that are both solutions of $y + 7x = 0$.

a) (7, 0) and (0, 7)

b) (-1, 7) and (7, 1)

c) (-1, 7) and (1, -7)

d) (-1, 0) and (1, -7)

2) Consider the ordered pair (1, 2) and the two equations in two unknowns:

M: $4x - 3y = 4$; N: $2x - 4y = -6$.

Which of the following is correct ?

a) (1, 2) is a solution of equation M
only

b) (1, 2) is a solution of equation N
only

c) (1, 2) is a solution of both
equations M and N

d) (1, 2) is not a solution of either
equation

4) Find the value of x so that (x, -4) is on the line given by $-2x + 3y = 6$.

a) -3

b) 9

c) 3

d) -9

- 5) Complete the following table of values for the equation $y + x = -8$.

x	2	10		
y			0	-2

a)

x	2	10	8	6
y	-6	2	0	-2

b)

x	-6	10	8	6
y	2	2	0	-2

c)

x	2	10	0	-2
y	2	10	0	-2

d)

x	2	10	-8	-6
y	-10	-18	0	-2

- 6) For equation $8x + 2y - 8 = 0$ find the missing coordinate of the ordered pair so that it is a solution. $(?, 8)$

a) 0

b) 1

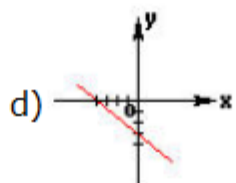
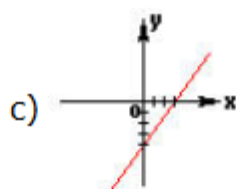
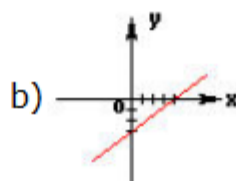
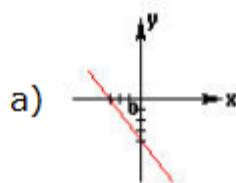
c) 8

d) - 1

7) Identify the location of the point $(1.5, -2.6)$.

- a) Quadrant I
- b) Quadrant II
- c) Quadrant III
- d) Quadrant IV

8) Which of the following is the graph of the equation $3x + 4y = -12$?



9) Find the x-intercept and the y-intercept of the graph of $4x - 3y = 24$.

a) x-intercept = $(0,0)$, y-intercept = $(4,-3)$

b) x-intercept = $(0,-8)$, y-intercept = $(4,-3)$

c) x-intercept = $(0,-8)$, y-intercept = $(6,0)$

d) x-intercept = $(6,0)$, y-intercept = $(0,-8)$

11) Find the slope of the line that passes through $(6, -3)$ and $(-4, -1)$.

a) $-\frac{2}{5}$

b) $-\frac{1}{5}$

c) $\frac{1}{5}$

d) 1

13) Find the slope of the line $y - 7 = 0$.

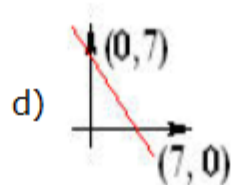
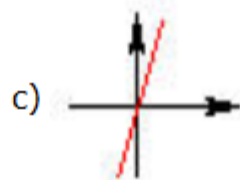
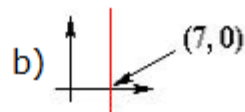
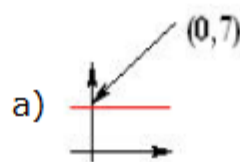
a) 0

b) 7

c) Undefined

d) -7

10) Graph $x = 7$.



12) Find the slope of the line through the given points.

$(3, 5)$ and $(6, 7)$.

a) 3

b) 2

c) $\frac{3}{2}$

d) $\frac{2}{3}$

14) Find the slope of the line $5x + y = 10$.

a) 5

b) -5

c) 2

d) -2

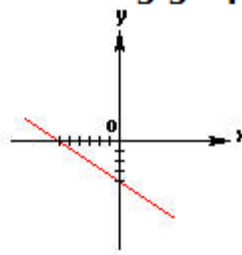
15) Find the slope of the line $3x - 4y = 16$.

- a) - 4
- b) 4
- c) $\frac{3}{4}$
- d) $-\frac{3}{4}$

17) Determine whether the lines are parallel, perpendicular or neither :
 $x + 2y = 5$ and $2x + y = 5$

- a) Parallel
- b) Perpendicular
- c) Neither

16) Find the slope of the line in the following graph :



a) $\frac{3}{2}$

b) $-\frac{3}{2}$

c) $\frac{2}{3}$

d) $-\frac{2}{3}$

18) Determine whether the following pair of lines is parallel, perpendicular, or neither.

$$4x + 3y = 9$$

$$4y = 5x - 12$$

- a) Parallel
- b) Perpendicular
- c) Neither

19) Write an equation in the form $Ax + By = C$, given that $m = \frac{2}{3}$ and y -intercept is $(0, -3)$, where A , B and C are integers.

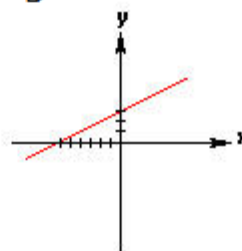
a) $x - 3y = -1$

b) $2x - 3y = 9$

c) $2x - 3y = -1$

d) $2x + 3y = -1$

20) What is the equation of the straight line in the following figure?



a) $y = 2x + 3$

b) $y = -2x + 3$

c) $y = \frac{1}{2}x + 3$

d) $y = \frac{1}{2}x - 3$

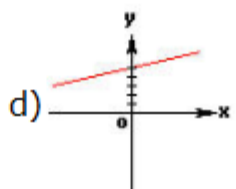
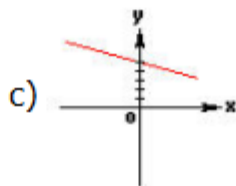
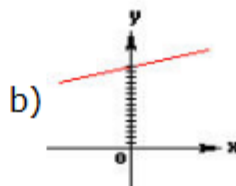
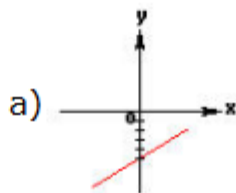
- 21) Find the equation of a line given that:
slope = - 2, y-intercept is (0, 4).

- a) $y = 2x + 4$
b) $y = - 2x + 4$
c) $y = - 2x - 4$
d) $y = 2x - 4$

- 23) Find the equation of the line containing the point (-3, -1) and has slope $-\frac{4}{3}$.

- a) $y = \frac{4}{3}x + 5$
b) $y = -\frac{4}{3}x + 5$
c) $y = \frac{4}{3}x - 5$
d) $y = -\frac{4}{3}x - 5$

- 22) Which of the following is the graph of the equation $3y = 2x + 15$?



- 24) Find the equation of the line containing the point (0, 17) and has slope $\frac{2}{21}$.

- a) $y = \frac{2}{21}x + 17$
b) $y = \frac{2}{21}x - 17$
c) $y = -\frac{2}{21}x + 17$
d) $y = -\frac{2}{21}x - 17$

- 25) Find the equation of the line with slope $\frac{5}{7}$ and passing through $(1, -6)$.

a) $-\frac{5}{7}x - y = -\frac{47}{7}$

b) $\frac{5}{7}x - y = \frac{47}{7}$

c) $-5x + 7y = -47$

d) $y = \frac{5}{7}x - 6$

- 27) Find the equation of the line containing the points $(-2, 5)$ and $(-4, -1)$.

a) $y = -3x - 11$

b) $y = 3x - 11$

c) $y = 3x + 11$

d) $y = -3x + 11$

- 29) Write the equation of the line that passes through $(-5, 1)$ and $(2, 1)$ in the form $y = mx + b$.

a) $y = \frac{1}{7}x - \frac{9}{7}$

b) $y = \frac{1}{7}x - \frac{5}{7}$

c) $x = 1$

d) $y = 1$

- 26) Find the equation of the line: Passing through $(-8, 5)$ and parallel to $9x - 8y + 9 = 0$.

a) $y = \frac{9}{8}x + 14$

b) $8x + 9y = -19$

c) $y = -\frac{8}{9}x - \frac{19}{9}$

d) $y = \frac{9}{8}x + \frac{9}{8}$

- 28) Find the equation of the line that passes through $(2, -3)$ and $(0, 1)$, in the form $Ax + By = C$.

a) $2x + y = 1$

b) $x - y = 5$

c) $x + y = 1$

d) $2x - y = -1$

- 30) Write the equation of the line that passes through $(1, -5)$ and $(1, 2)$.

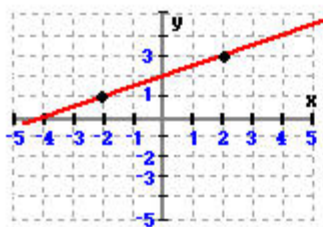
a) $y = \frac{1}{7}x - \frac{9}{7}$

b) $y = \frac{1}{7}x - \frac{5}{7}$

c) $y = 1$

d) $x = 1$

- 31) Determine the slope of the line in the following graph.



- a) 2
 b) $-\frac{2}{3}$
 c) $\frac{1}{3}$
 d) $\frac{1}{2}$
- 33) If the graph of $x - 2y = 6$ is a line L through the points $(0, -3)$ and $(6, 0)$, describe the graph of $x - 2y \geq 6$.

Half-plane containing the line L as
 a) its boundary L and containing the origin.

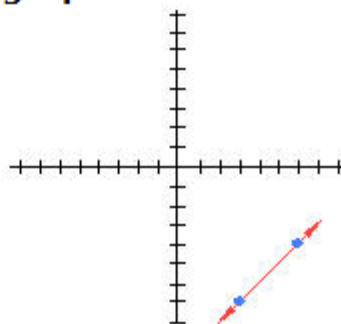
Half-plane containing the line L as
 b) its boundary L and not containing the origin.

Half-plane not containing the line
 c) L as its boundary L and containing the origin.

- 35) For $f(x) = 3 - 3x$, find $f(-3)$.

- a) 6
 b) - 6
 c) - 3
 d) 12

- 32) What is the equation of the straight line in the following graph?



- a) $-x + y + 10 = 0$
 b) $5x + 4y = 1$
 c) $4x + 5y = 9$
 d) $4x - 5y = 1$
- 34) If the graph of $x - 2y = 6$ is a line L through the points $(0, -3)$ and $(6, 0)$, describe the graph of $x - 2y > 6$.

Half-plane containing the line L
 a) as its boundary L and containing the origin.

Half-plane containing the line L
 b) as its boundary L and not containing the origin.

Half-plane not containing the
 c) line L as its boundary and not containing the origin.

- 36) Let $f(x) = 2x - x^2$, find $f(3)$.

- a) 15
 b) $6 - x^2$
 c) - 3
 d) $6 + x^2$

37) Let $f(x) = -|x - 7|$. Find $f(-7)$.

- a) - 1
- b) - 14
- c) 1
- d) 0

39) For $f(x) = \frac{x^2 + 4x}{5 - x}$, find $f(1)$.

- a) $\frac{9}{5}$
- b) $\frac{5}{6}$
- c) $\frac{5}{4}$
- d) 1

38) Let $f(x) = 2x + |2x|$. What is $f(-8)$?

- a) $2 + x$
- b) $-2 + x$
- c) - 16
- d) 0

40) For the function $f(x) = 2x^2 - 8x + 1$, find $f(2)$.

- a) -9
- b) -7
- c) 9
- d) 7

Worksheet-3

MTH-05: Elementary Algebra (Linear Equations / Inequalities in Two Variables)

Answer Keys

- | | |
|--|---|
| <p>1) c) $\frac{x\text{-Coordinate}}{1} = 3, y\text{-Coordinate} = -$</p> <p>3) c) (-1, 7) and (1, -7)</p> <p>5) d)</p> <p>7) d) Quadrant IV</p> <p>9) d) $x\text{-intercept} = (6,0), y\text{-intercept} = (0,-8)$</p> <p>11) b) $-\frac{1}{5}$</p> <p>13) a) 0</p> <p>15) c) $\frac{3}{4}$</p> <p>17) c) Neither</p> <p>19) b) $2x - 3y = 9$</p> <p>21) b) $y = -2x + 4$</p> <p>23) d) $y = -\frac{4}{3}x - 5$</p> <p>25) c) $-5x + 7y = -47$</p> <p>27) c) $y = 3x + 11$</p> <p>29) d) $y = 1$</p> <p>31) d) $\frac{1}{2}$</p> | <p>2) b) (1, 2) is a solution of equation N only</p> <p>4) d) -9</p> <p>6) d) -1</p> <p>8) d)</p> <p>10) b)</p> <p>12) d) $\frac{2}{3}$</p> <p>14) b) -5</p> <p>16) d) $-\frac{2}{3}$</p> <p>18) c) Neither</p> <p>20) c) $y = \frac{1}{2}x + 3$</p> <p>22) d)</p> <p>24) a) $y = \frac{2}{21}x + 17$</p> <p>26) c) $y = -\frac{8}{9}x - \frac{19}{9}$</p> <p>28) a) $2x + y = 1$</p> <p>30) d) $x = 1$</p> <p>32) a) $-x + y + 10 = 0$</p> |
|--|---|

33) Half-plane containing the line L as
b) its boundary L and not containing
the origin.

35) d) 12

37) b) - 14

39) c) $\frac{5}{4}$

34) Half-plane not containing the line
c) L as its boundary and not
containing the origin.

36) c) - 3

38) d) 0

40) b) -7