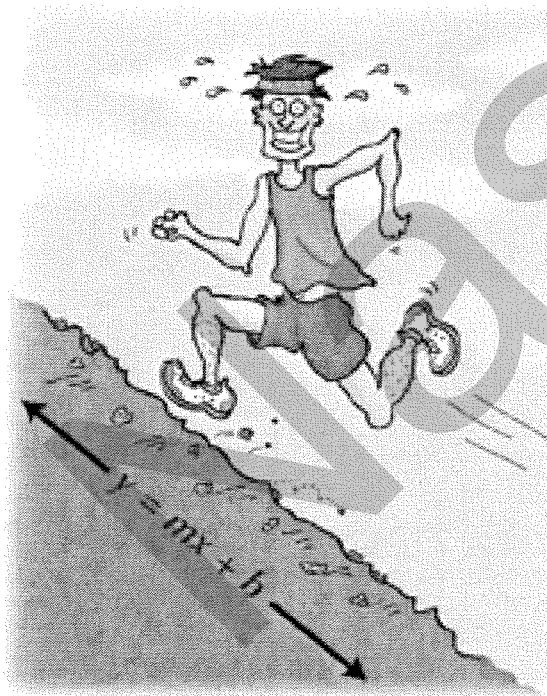


Linear Equations

Booklet

Sec 3



Slope

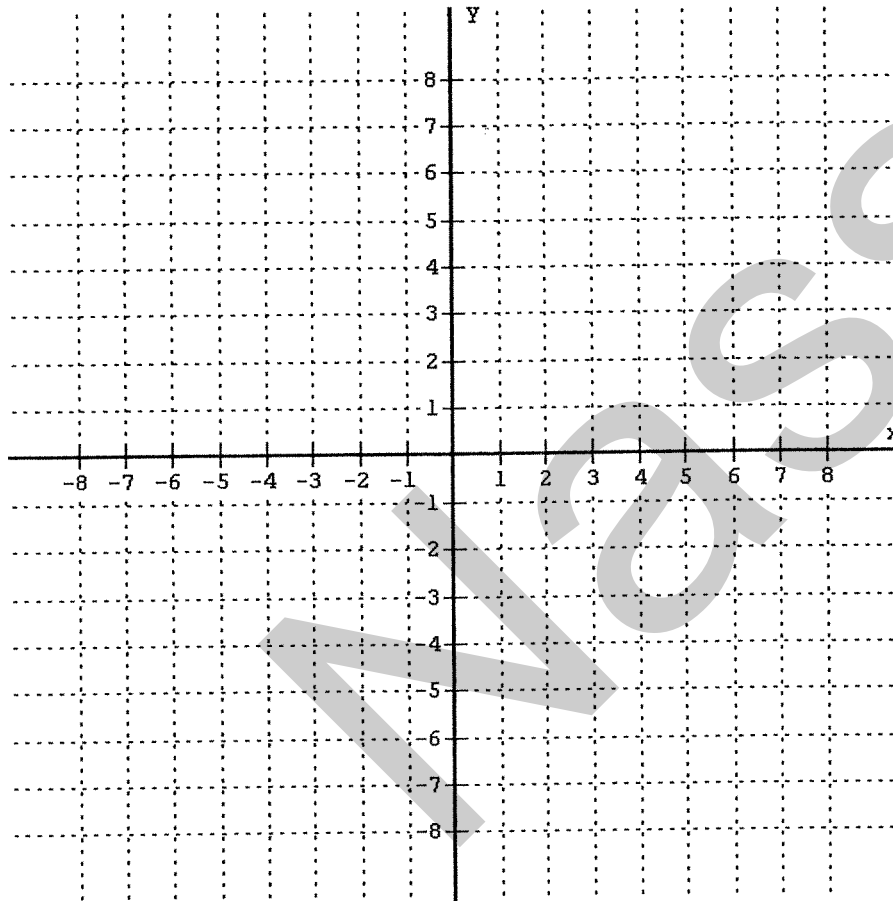
Equation of a line

Comparison Method

Ms. Nassif

You Can Get There From Here!

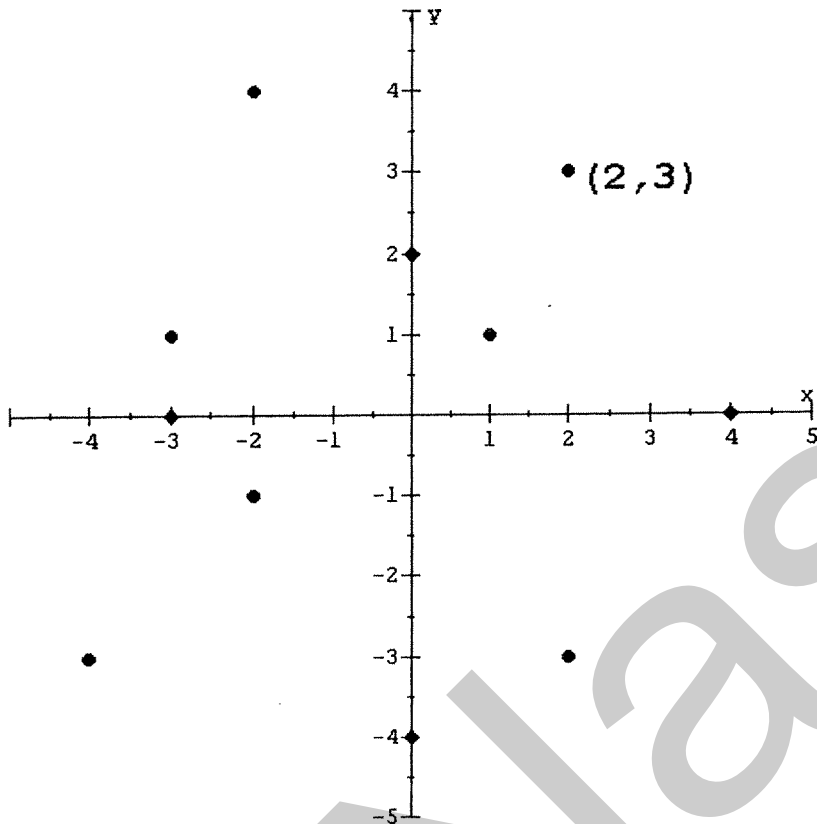
General Directions: Plot each ordered pair on this grid. Draw line segments to connect the points in the order listed. Connect the points as you go. Do NOT wait until the end to connect the points. Stop connecting points when you see "Stop". Start a new line segment with the next group of points.



- | | | | |
|---------|---------|----------|---------|
| Start | (4, 0) | (-8, -2) | (0, 5) |
| (4, 4) | (4, 4) | (-7, -2) | (-2, 5) |
| (6, 6) | Stop | (-7, 3) | (-2, 6) |
| (8, 6) | | (-4, 3) | (2, 6) |
| (9, 5) | Start | Stop | (2, 5) |
| (9, 4) | (-7, 4) | | (1, 5) |
| (8, 5) | (-5, 4) | Start | (1, 0) |
| (7, 5) | (-5, 5) | (1, 0) | Stop |
| (5, 4) | (-7, 5) | (-1, -2) | |
| (5, 1) | (-7, 4) | (-2, -2) | Done |
| (6, -1) | Stop | (-3, -1) | |
| (8, -1) | | (-3, 0) | |
| (9, 0) | Start | (-2, 0) | |
| (9, -1) | (-4, 3) | (-2, -1) | |
| (8, -2) | (-4, 6) | (-1, -1) | |
| (6, -2) | (-8, 6) | (0, 0) | |

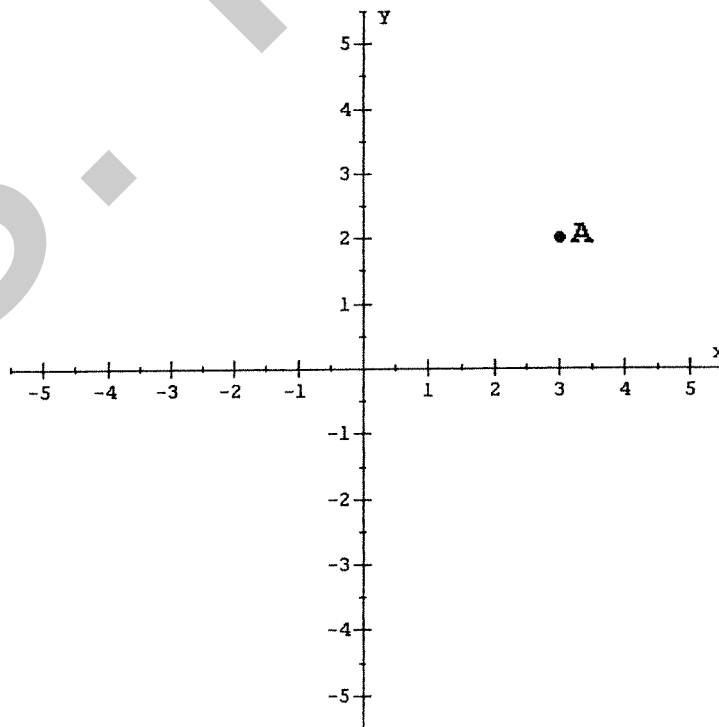
Plotting Points 3

I Label the following points with their respective coordinates



II Plot and Label the following points on the grid.

- A (3, 2)
- B (-4, 3)
- C (5, -2)
- D (-2, -3)
- E (4, 0)
- F (0, -4)
- G (-1, 2)
- H (-3, 0)
- I (0, 5)
- J (2, -3)



Name _____

Date _____

Finding Slope From Two Points

Find the slope of the line through each pair of points.

1) $(19, -16), (-7, -15)$

2) $(1, -19), (-2, -7)$

3) $(-4, 7), (-6, -4)$

4) $(20, 8), (9, 16)$

5) $(17, -13), (17, 8)$

6) $(19, 3), (20, 3)$

7) $(3, 0), (-11, -15)$

8) $(19, -2), (-11, 10)$

9) $(6, -10), (-15, 15)$

10) $(12, -18), (-15, -18)$

11) $(3, -20), (5, 8)$

12) $(15, 8), (-17, 9)$

13) $(-19, 12), (-9, 1)$

14) $(12, 2), (-7, 5)$

15) $(6, -12), (15, -3)$

16) $(9, 3), (19, -17)$

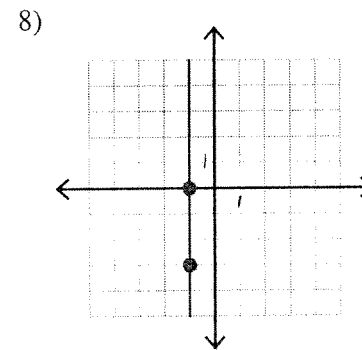
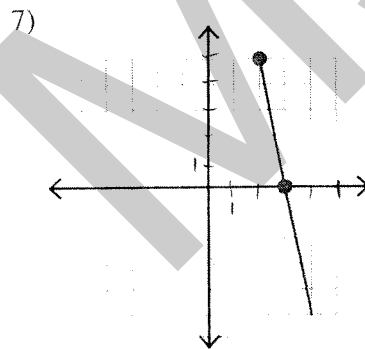
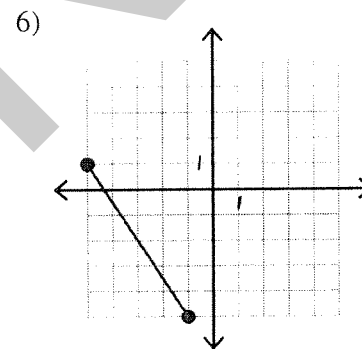
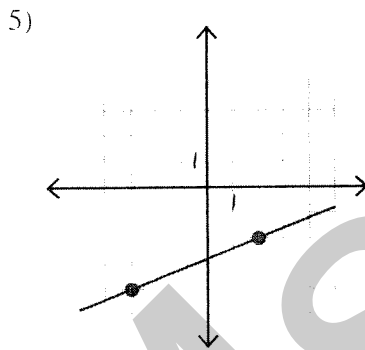
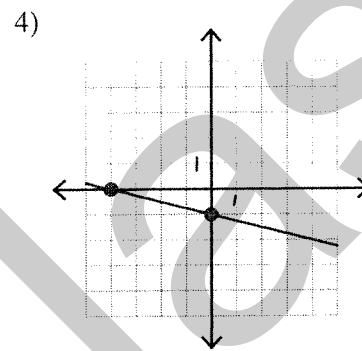
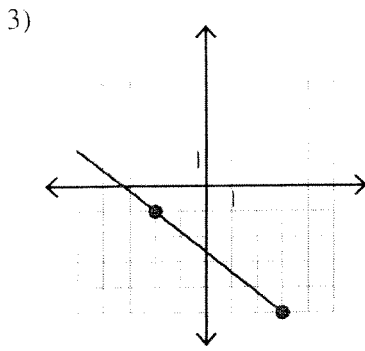
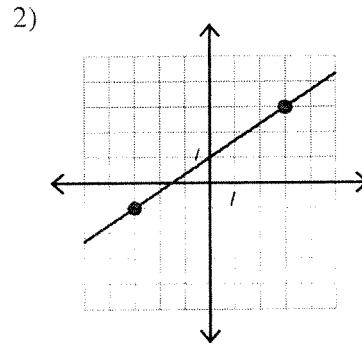
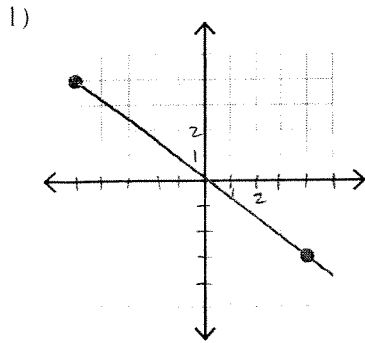


Name _____

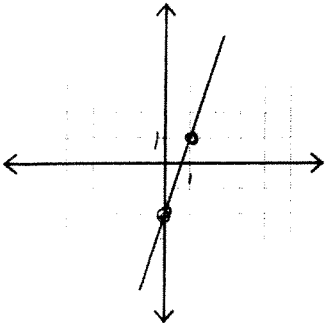
Date _____

Finding Slope From a Graph

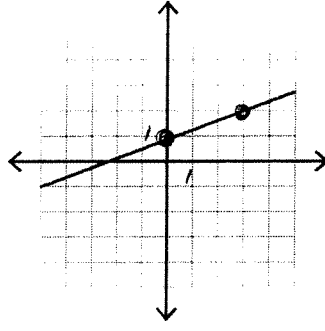
Find the slope of each line.



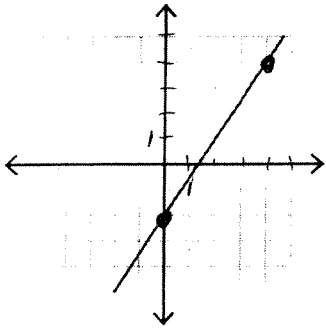
9)



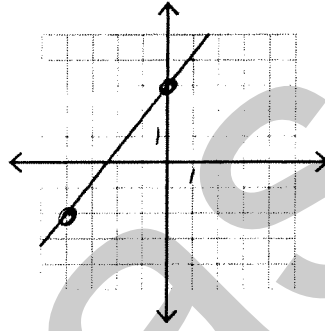
10)



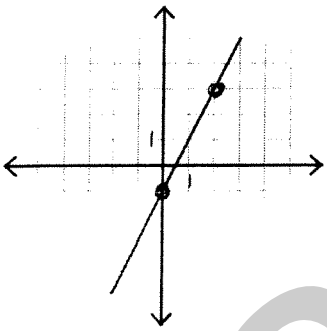
11)



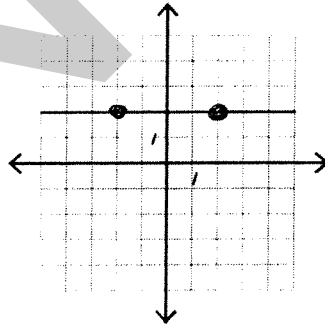
12)



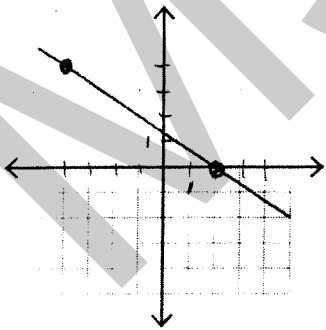
13)



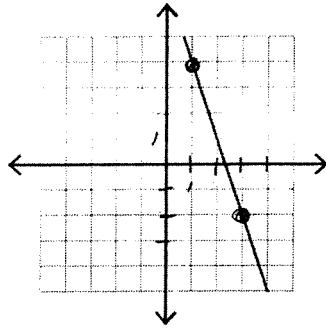
14)



15)

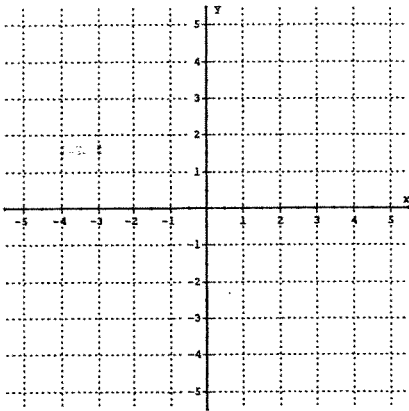


16)

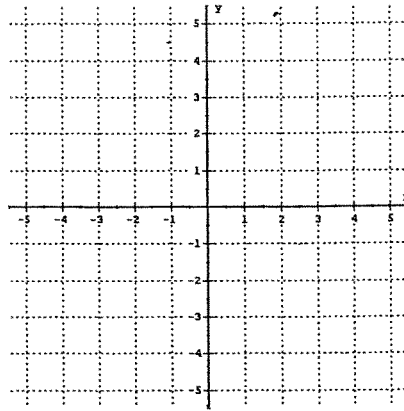


Graphing Lines Using Slope and Y-Intercept Worksheet I

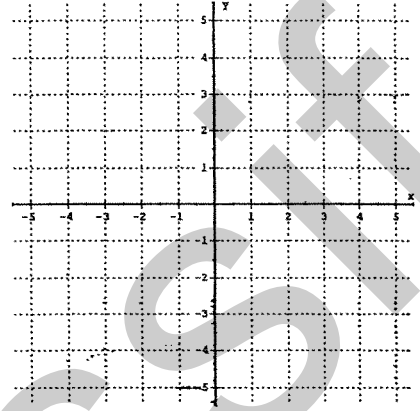
Directions: Sketch the graph of each line by plotting its y-intercept and then using its slope



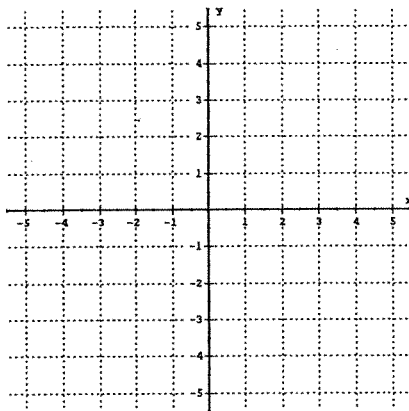
1) $y = 2x$



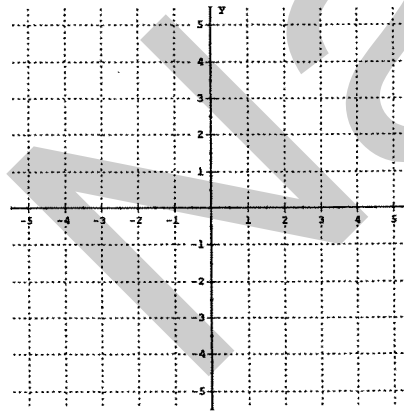
2) $y = -5x$



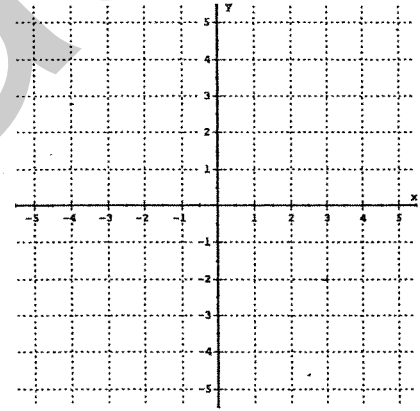
3) $y = \frac{2}{5}x$



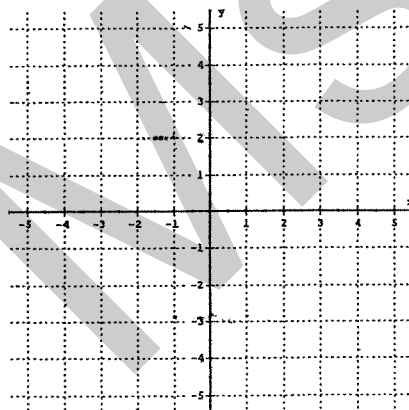
4) $y = x + 2$



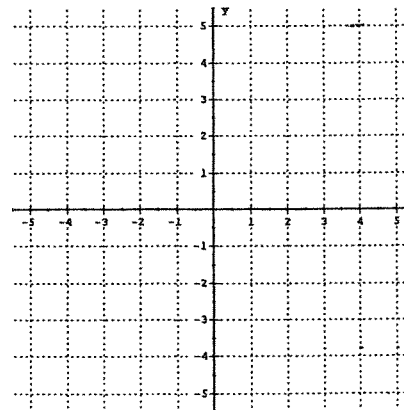
5) $y = x - 3$



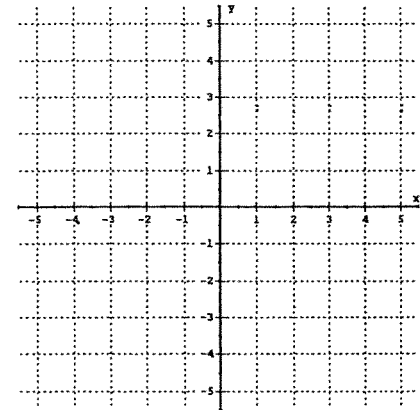
6) $y = 2x - 1$



7) $y = -4x + 1$



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



9) $y = -\frac{5}{2}x + 3$

Graph each table of values on a cartesian PLANE.

①

(x)	2	4	6	8
(y)	3	7	11	15

②

(x)	0	2	4	6
(y)	0	6	12	18

③

(x)	-8	-6	-4	-2
(y)	9	7	5	3

④

(x)	1	2	3	4
(y)	10	20	30	40

⑤

(x)	3	4	5	6
(y)	14	17	20	23

⑥

(x)	4	8	12	16
(y)	1	2	3	4

⑦

(x)	6	10	14	18
(y)	3	5	7	9

⑧

(x)	2	4	6	8
(y)	19	23	27	31

⑨

(x)	0	2	4	6
(y)	25	85	145	205

⑩

(x)	1	5	10	15
(y)	5	25	50	75

NAME: _____

Fill in the blanks :

EQUATION OF LINE

	Find a	Find b	FIND EQUATION
1) $(2, 1)$ $(-3, 5)$	_____	_____	_____
2) $(-3, 1)$ $(2, -1)$	_____	_____	_____
3) $(-2, -3)$ $(1, 5)$	_____	_____	_____
4) $(-2, -4)$ $(-3, 7)$	_____	_____	_____
5) $(1, 2)$ $(3, 5)$	_____	_____	_____
6) $(5, 0)$ $(-1, 3)$	_____	_____	_____
7) $(-1, 2)$ $(3, 3)$	_____	_____	_____
8) $(1, 5)$ $(3, 2)$	_____	_____	_____
9) $(3, 5)$ $(1, 1)$	_____	_____	_____
10) $(1, 1)$ $(4, 5)$	_____	_____	_____
11) $(1, 4)$ $(4, 2)$	_____	_____	_____
12) $(3, 3)$ $(3, 1)$	_____	_____	_____
13) $(1, 2)$ $(3, -1)$	_____	_____	_____
14) $(1, 1)$ $(5, 4)$	_____	_____	_____
15) $(1, 3)$ $(4, 2)$	_____	_____	_____

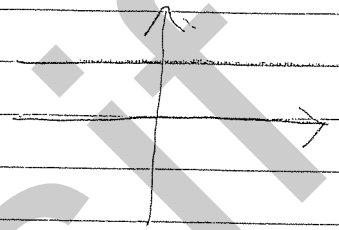
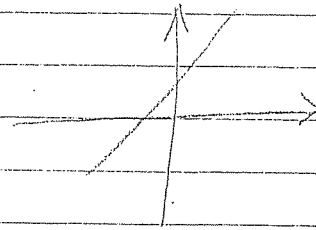
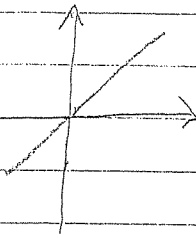
Linear Equations



Direct

Partial

zero or constant



$$y = ax$$

$$y = ax + b$$

$$y = b$$

$$y = 3x$$

$$y = 2x - 1$$

$$y = 5$$

x	0	1	2
y	0	3	6

x	0	1	2
y	-1	1	3

x	0	1	2
y	5	5	5

MS.

Finding the equation from a table of value

Steps

- 1.) Find the slope ('a')
- 2.) Find the y-intercept ('b') by looking at the y-value for $x=0$.
- 3.) Write the equation.

EX 1

x	0	2	4
y	1	-3	-7

EX 2

x	0	5	10
y	0	-15	-30

EX 3

x	0	3	6
y	10	10	10

EX 4

x	2	4	6
y	12	22	32

EX 5

x	10	20	30
y	70	140	210

EX 6

x	3	6	9
y	-3	-9	-15

EX 7

x	4	8	16
y	-5	-5	-5

Word Problems

Write the equation for each one.

- (1) Steve obtains 200\$ for a job no matter the amount of hours he spends at it.
- (2) Allan must pay 100\$ for a car rental plus \$0.50 per kilometer.
- (3) John must pay 2\$ for every fish he catches.
- (4) A pool filled with 40L is being emptied at a rate of 2L per minute.
- (5) A empty pool is being filled at a rate of 5L per minute.
- (6) Mary earns 70\$ no matter the number of toys she builds.

④ Write the equation in $y=ax+b$ form.
And describe the type of relation.

a)
$$\begin{array}{cccc} X & 0 & 1 & 2 \\ Y & 2 & 0 & -2 \end{array}$$

b)
$$\begin{array}{cccc} X & -2 & -1 & 0 \\ Y & 3 & 1 & -1 \end{array}$$

c)
$$\begin{array}{cccc} X & 0 & 2 & 4 \\ Y & 0 & -6 & -12 \end{array}$$

d)
$$\begin{array}{cccc} X & -1 & 0 & 1 \\ Y & -4 & -4 & -4 \end{array}$$

e)
$$\begin{array}{cccc} X & 1 & 2 & 3 \\ Y & 6 & 12 & 18 \end{array}$$

f)
$$\begin{array}{cccc} X & -2 & -1 & 0 \\ Y & -16 & -8 & 0 \end{array}$$

g)
$$\begin{array}{cccc} X & 1 & 2 & 3 \\ Y & 4 & 7 & 10 \end{array}$$

h)
$$\begin{array}{cccc} X & -1 & 0 & 1 \\ Y & -10 & -10 & -10 \end{array}$$

i)
$$\begin{array}{cccc} X & 2 & 4 & 6 \\ Y & -5 & -4 & -3 \end{array}$$

j)
$$\begin{array}{cccc} X & 0 & 10 & 20 \\ Y & 0 & -30 & -60 \end{array}$$

k)
$$\begin{array}{cccc} X & 5 & 10 & 15 \\ Y & 9 & 9 & 9 \end{array}$$

l)
$$\begin{array}{cccc} X & 2 & 3 & 4 \\ Y & 4 & 7 & 10 \end{array}$$

⑤ Find the equation in $y = ax + b$ form

a)

X	0	2	4
Y	-1	0	1

b)

X	0	1	2
Y	0	-3	-6

c)

X	4	8	12
Y	10	26	42

d)

X	1	2	3
Y	5	5	5

e)

X	11	12	13
Y	27	29	31

f)

X	-6	-5	-4
Y	22	19	16

g)

X	5	6	7
Y	20	20	20

h)

X	15	25	30
Y	10	16	19

NAME: _____

**Linear Equation
Word Problems**

Find the linear equation associated with each situation.

- _____ 1. Sophia charges 500\$ for each Canada Goose jacket she sells.
- _____ 2. Mike obtains Mary obtains 500\$ for a job no matter the amount of hours he spends on it.
- _____ 3. Cathy has a part-time job and is paid 9.25\$ an hour.
- _____ 4. Frisco's bank account contains 525\$. He deposits 50\$ every month.
- _____ 5. Mindy's bank account contains 1000\$. She shops for 40\$ every month.
- _____ 6. A plumber charges a flat rate of 25\$, plus 30\$ for every hour he works there after.
- _____ 7. Cody has no money in the bank but wishes to put 200\$ per month.
- _____ 8. A bus ticket costs 3\$ regardless of which metro station you stop at.
- _____ 9. Steven is at a Chinese Buffet that charges 18.95\$ per person.
- _____ 10. A bathtub containing 120 liters of water is being emptied at a rate of 40 liters per minute.
- _____ 11. Giovanni's cell phone plan costs 15\$ a month plus 0.10\$ per minute of use.
- _____ 12. Maya will get paid 300\$ for translating a document, no matter the number of hours she works on it.
- _____ 13. Benny will pay 5\$ for an ice cream cone to each of his friends.
- _____ 14. Anna must pay 10\$ for a movie, regardless of the length of the movie.
- _____ 15. Henry must pay 10\$ for every movie he watches.