Name: KEY Date: _____ Block: _____

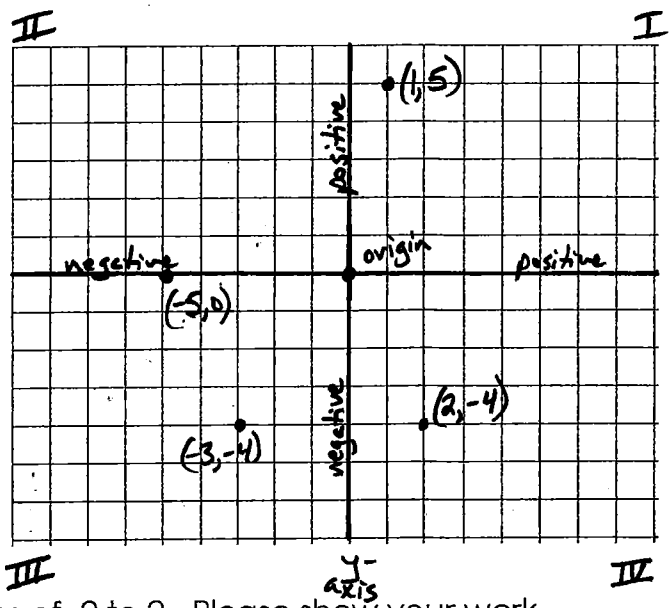
Math 8 Practice Assessment ~ Linear Equations & Graphing

1. On the grid provided draw and label the following

   a) x and y axes
   b) 4 quadrants
   c) origin
   d) positive and negative ends of each axis

2. On the same grid, plot and label the following points:

   a) (2,-4)
   b) (-5,0)
   c) (-3, -4)
   d) (1,5)



3. Create a table of values for each relation for values of -2 to 2. Please show your work

$y = -6x + 1$

x	y
2	-11
1	-5
0	1
-1	7
-2	13

-6

2: $= -6(2)+1$
$= -12+1$
$= -11$

1: $= -6(1)+1$
$= -6+1$
$= -5$

$y = 7x - 4$

x	y
2	10
1	3
0	-4
-1	-11
-2	-18

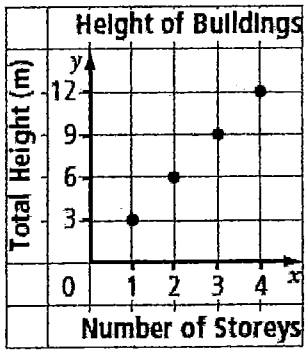
-7

-2: $= 7(-2)-4$
$= -14-4$
$= -18$

-1: $= 7(-1)-4$
$= -7-4$
$= -11$

4. a) Create a table of values for the graph shown on the right.

x	y
1	3
2	6
3	9
4	12



b) How many storeys are there if the total height is 9m? 3

c) Describe the pattern.

As the number of storeys(x) goes up by 1 the height(y) goes up by 3.

d) Is it possible to have points between the ones on the graph? Explain your answer.

No. You can not have half a floor.

e) Write an equation for this line.

$y = 3x$

5. State whether the following are linear relations. Explain **two ways** you know.

Table 1

x	y	
1	3	+3
2	6	+3
3	9	+3
4	12	+3
5	15	

Linear? Yes

x goes up by same amount and y goes up by same amount. It gives a straight line.

Table 2

x	y	
2	3	+6
4	9	+7
6	16	+8
8	24	+14
10	38	

Linear? No

y doesn't go up by same amount, or give/draw a straight line.

6. Given the table of values below, write a linear equation representing the pattern.

Term Number (t)	Term Value (v)	
1	8	+5
2	13	
3	18	
4	23	

Pattern: "x" goes up by one as "y" goes up by 5.

Equation: **v =** $5t+3$ [or.... $y = 5x + 3$]

7. Find the y-intercept and x-intercept for the following equations. Write the intercepts as a coordinate pair.

y = 2x - 1

y-intercept (0 , -1)

x-intercept (1/2 , 0)

y = ⅔x + 2

y-intercept (0 , 2)

x-intercept (-3 , 0)

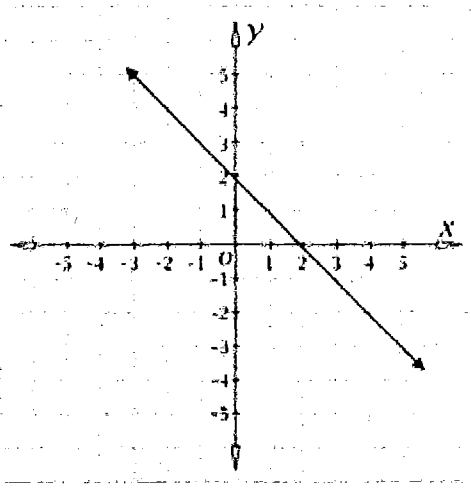
8. Use the following graph to create an **equation AND table of values.**

X	y
2	0
1	1
0	2
-1	3
-2	4

$y = -x + 2$

$2: -2 + 2 = 0$

$1: -1 + 2 = +1$



9. A taxi company in Kelowna charges customers $5.00, plus $2.00 for each kilometer being driven. This can be represented as C = 5 + 2d.

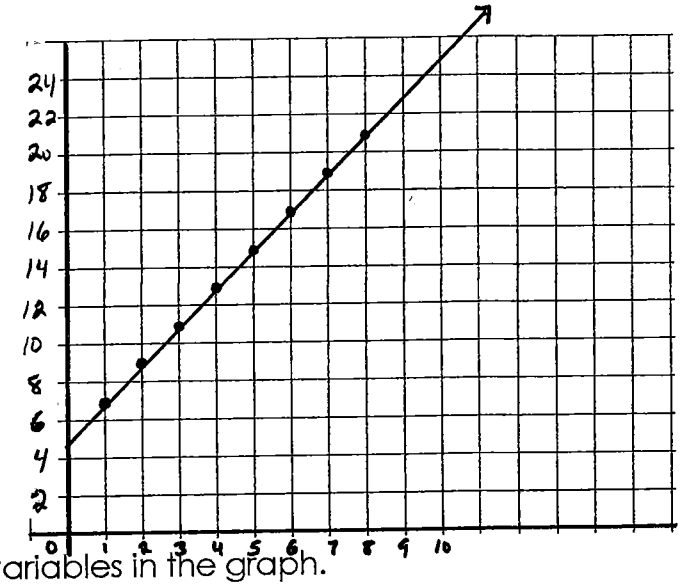
a) Create a table of values for the relation (up to 8 km), and then graph the relation. Please give your graph a title and label the axes with numbers and units.

(d) x	(C) y
1	7
2	9
3	11
4	13
5	15
6	17
7	19
8	21

$C = 5 + 2d$

1: $= 5 + 2(1)$
$= 7$

2: $= 5 + 2(2)$
$= 5 + 4$
$= 9$



b) Describe the relationship between the variables in the graph.

As "x" goes up by 1 "y" goes up by 2

c) What is the cost at 20 km? $C = 5 + 2d$
$= 5 + 2(20)$
$= 5 + 40$
$\Rightarrow$ $45

d) How far can a person be driven by the taxi if s/he has $23?

$C = 5 + 2d$
$23 = 5 + 2d$
$-5 \quad -5$
$\frac{18}{2} = \frac{2d}{2}$
$9 = d$

9 Km

10. Screen-printing a shirt takes 1 minute per shirt plus 2 extra minutes for the initial set up.

a) Write an equation for the statement above. Explain what each of your variables represent

t = time
s = # of shirts

$t = s + 2$

b) How many shirts could be done in 50 minutes?

$t = s + 2$
$\frac{50}{-2} = \frac{s}{-2} + \frac{2}{-2}$

s = 48 shirts

c) How long will it take for 36 shirts?

$t = s + 2$
$t = 36 + 2$
$t = 38$ min

d) Graph this on the axes provided.

2: $= s + 2$
$= 2 + 2$
$= 4$

1: $= s + 2$
$= 1 + 2$
$= 3$

(s) x	y(t)
2	4
1	3
0	2
-1	1
-2	0