



## Warm Up Grade 8



1) Find the missing value for the ordered pairs of  $y = 2x - 7$

(show work)

a)  $(-2, \underline{\quad})$

$$\begin{aligned}
 y &= 2x - 7 \\
 y &= 2(-2) - 7 \\
 &\quad -4 \quad -7 \\
 &\quad -4 + (-7) \\
 y &= -11 \\
 &(-2, -11)
 \end{aligned}$$

b)  $(\underline{\quad}, 29)$

$$\begin{aligned}
 y &= 2x - 7 \\
 29 &= 2x - 7 \\
 29 + 7 &= 2x - 7 + 7 \\
 36 &= 2x \\
 \div 2 &\quad \div 2 \\
 18 &= x \\
 (18, 29)
 \end{aligned}$$

4a)  $y = x + 1$

Input	Output
$x$	$y$
1	2
2	3
3	4
4	5
5	6

b)  $y = x + 3$

Input	Output
$x$	
1	4
2	5
3	6
4	7
5	8

c)  $y = 2x$

Input	Output
$x$	$y$
1	2
2	4
3	6
4	8
5	10

5. a)  $y = 2x + 1$

Input	Output
$x$	$y$
1	3
2	5
3	7
4	9
5	11

b)  $y = 2x - 1$

Input	Output
$x$	$y$
1	1
2	3
3	5
4	7
5	9

$$2(x) - 1$$

$$2(1) - 1$$

$$2 - 1$$

$$1$$

$$2(2) - 1$$

$$4 - 1$$

$$3$$

$$2(3) - 1$$

$$6 - 1$$

$$5$$

c)  $y = -2x + 1$

Input	Output
$x$	$y$
1	-1
2	-3
3	-5
4	-7
5	-9

$$-2(1) + 1$$

$$-2 + 1$$

$$-1$$

$$-2(2) + 1$$

$$-4 + 1$$

$$-3$$

$$-2(3) + 1$$

$$-6 + 1$$

$$-5$$

b. ordered pairs

Input	Output
$x$	$y$
0	-7
1	2
2	11
3	20
4	29
5	38

$$y = 9x - 7$$

$$x=2 \quad 9(1) - 7$$

$$9 \times 2 - 7$$

$$18 - 7$$

$$11$$

$$x=4$$

$$9 \times 4 - 7$$

$$36 - 7$$

$$29$$

$$y = 9(x) - 7$$

$$38 = 9x - 7 \quad \text{or}$$

$$38 + 7 = 9x - 7 + 7$$

$$45 = 9x$$

$$\frac{45}{9} = \frac{9x}{9}$$

$$5 = x$$

see if pattern continue

$$9 \times 5 - 7$$

$$45 - 7$$

$$38$$

7.  $w = 7h$

Input	Output
$h$	$7h$
1	7
2	14
3	21
4	28
5	35

Input	Output

b)

$$7h = 105$$

$$\frac{7h}{7} = \frac{105}{7}$$

$$h = 15$$

c)

$$h = 24$$

$$w = 7h$$

$$= 7 \times 24$$

$$= 168$$

8a)  
😊

$$y = x + 2$$

Input	Output
1	3
-3	-1
-2	0
-1	1
0	2
1	3
2	4
3	5

Input	Output

b)

$$y = x - 3$$

Input	Output
1	-2
-3	-6
-2	-5
-1	-4
0	-3
1	-2
2	-1
3	0

c)  
😊

$$y = x + 4$$

Input	Output
1	5
-3	1
-2	2
-1	3
0	4
1	5
2	6
3	7

9a) 357

$$y = -2x + 3$$

Input	Output
0	3
1	1
2	-1
3	-3
4	-5
5	-7

b)  $y = -5x - 4$

Input	Output
0	-4
1	-9
2	-14
3	-19
4	-24
5	-29

c)  $y = 8x - 3$

Input	Output
0	-3
1	5
2	13
3	21
4	29
5	37

10

$$y = -3x + 5$$

Input $x$	Output $y$
-3	14
-1	8
1	2
3	-4
5	-10
7	-16

ordered pairs

$$\begin{aligned} x &= 1 \\ y &= -3(1) + 5 \\ &= -3 + 5 \\ &= 2 \end{aligned}$$

$$\begin{aligned} x &= 5 \\ y &= -3(5) + 5 \\ &= -15 + 5 \\ &= -10 \end{aligned}$$

$$\begin{aligned} -16 &= -3x + 5 \\ -16 - 5 &= -3x + 5 - 5 \\ -21 &= -3x \\ \frac{-21}{-3} &= \frac{-3x}{-3} \\ 7 &= x \end{aligned}$$

$$10) \quad y = -3x + 5$$

$$\begin{pmatrix} x \\ 1 \end{pmatrix}, \begin{pmatrix} y \\ - \end{pmatrix}$$

$$y = -3x + 5$$

$$y = -3(1) + 5$$

$$y = (-3) + (5)$$

$$y = \boxed{+2}$$

$$\begin{pmatrix} x \\ 5 \end{pmatrix}, \begin{pmatrix} y \\ - \end{pmatrix}$$

$$y = -3x + 5$$

$$y = -3(5) + 5$$

$$y = (-15) + (5)$$

$$\boxed{y = -10}$$

$$\begin{pmatrix} x \\ - \end{pmatrix}, \begin{pmatrix} y \\ -16 \end{pmatrix}$$

$$y = -3x + 5$$

$$-16 = -3x + 5$$

$$-16 - 5 = -3x + 5 - 5$$

$$-21 = -3x$$

$$\div -3 \quad \div -3$$

$$\boxed{+7 = x}$$

$$\text{!! a) } y = -2x + 7$$

$$\begin{aligned} \text{a) } (-8, -) \\ y &= -2x - 8 + 7 \\ &= 16 + 7 \\ &= 23 \end{aligned}$$

$$\begin{aligned} \text{b) } (12, -) \\ y &= -2 \times 12 + 7 \\ &= -24 + 7 \\ &= -17 \end{aligned}$$

$$\begin{aligned} \text{c) } (, 31) \\ 31 &= -2x + 7 \\ 31 - 7 &= -2x + 7 - 7 \\ 24 &= -2x \\ \frac{24}{-2} &= \frac{-2x}{-2} \\ -12 &= x \end{aligned}$$

$$\begin{aligned} \text{d) } (, -23) \\ -23 &= -2x + 7 \\ -23 - 7 &= -2x + 7 - 7 \\ -30 &= -2x \\ \frac{-30}{-2} &= \frac{-2x}{-2} \\ 15 &= x \end{aligned}$$

$$\text{!} 12. m = 100 - 2n$$

Input	Output
0	100
5	90
10	80
15	70
20	60
25	50

(b)  
 $\rightarrow$  after 20 weeks  
 he will have a mass  
 of 60kg

$$\begin{aligned} \text{b) } 100 - 2n &= 60 \\ 100 - 2n - 100 &= 60 - 100 \\ -2n &= -40 \\ \frac{-2n}{-2} &= \frac{-40}{-2} \\ n &= 20 \end{aligned}$$

In 20 months  
 he will have  
 reached 60kg

$$\begin{aligned} \text{c) } n = 7, \quad 100 - 2n \\ 100 - 2 \times 7 \\ 100 - 14 \\ 86 \end{aligned}$$

On his 7-day  
 his mass was  
 86kg



$$B. a) m = 9t$$

$m \Rightarrow$  multiples of 9

$t \Rightarrow$  the number you multiply by

Input $t$	Output $m$
0	0
1	9
2	18
3	27
4	36
5	45

d) numbers go up by 9

A number is divisible by 9 if the sum of the digits is a multiple of 9.

$$d) 126 \Rightarrow 1 + 2 + 6 = 9$$

so yes 126 is divisible by 9.

e) 17<sup>th</sup> multiple of 9

$$17 \times 9 = 153$$

Extra Practice 6

Lesson 6.6: Creating a Table of Values

1. Copy and complete each table of values.

a)  $y = 3x + 7$

x	y
1	10
2	13
3	16
4	19
5	22

$x=1$   
 $3(1)+7$   
 $3+7$   
 $10$

$x=2$   
 $3(2)+7$   
 $6+7$   
 $13$

$x=3$   
 $3(3)+7$   
 $9+7$   
 $16$

b)  $y = 2x - 2$

x	y
1	0
2	2
3	4
4	6
5	8

$2x-2$   
 $2(1)-2$   
 $2-2$   
 $0$

$2x-2$   
 $2(2)-2$   
 $4-2$   
 $2$

$2x-2$   
 $2(3)-2$   
 $6-2$   
 $4$

c)  $y = -5x + 4$

x	y
1	-1
2	-6
3	-11
4	-16
5	-21

$-5x+4$   
 $-5(1)+4$   
 $-5+4$   
 $-1$

$-5x+4$   
 $-5(2)+4$   
 $-10+4$   
 $-6$

$-5x+4$   
 $-5(3)+4$   
 $-15+4$   
 $-11$

2. Copy and complete each table of values.

a)  $y = -x + 2$

x	y
-3	5
-2	4
-1	3
0	2
1	1
2	0
3	-1

$-(-3)+2$   
 $3+2$   
 $5$

$-(-2)+2$   
 $2+2$   
 $4$

$-(-1)+2$   
 $1+2$   
 $3$

b)  $y = -4x - 5$

x	y
-3	7
-2	3
-1	-1
0	-5
1	-9
2	-13
3	-17

$-4(-3)-5$   
 $12-5$   
 $7$

$-4(-2)-5$   
 $8-5$   
 $3$

$-4(-1)-5$   
 $4-5$   
 $-1$

c)  $y = 5x + 8$

x	y
-3	-7
-2	-2
-1	3
0	8
1	13
2	18
3	23

$5(-3)+8$   
 $-15+8$   
 $-7$

$5(-2)+8$   
 $-10+8$   
 $-2$

$5(-1)+8$   
 $-5+8$   
 $3$

3. The equation of a linear relation is:  $y = -7x + 10$

Some ordered pairs in the relation are:  $(-1, 17), (0, 10), (1, \quad), (2, -4), (-11, (4, \quad))$

Find the missing numbers in the ordered pairs

$-7(1)+10$   
 $-7+10$   
 $3$

$-7(-11)+10$   
 $77+10$   
 $87$

$-7(4)+10$   
 $-28+10$   
 $-18$

$3 = x$

4. The cost of parking at the airport is \$15 the first day, plus \$6 for each additional day. An equation for this relation is  $C = 15 + 6a$ , where  $a$  represents the number of additional days, and  $C$  represents the total cost of the parking.

a) Use the equation to create a table of values.  
 b) Hank parked for 14 additional days. How much did Hank spend on parking?  
 c) Sentor spent \$207 on parking. How many rides additional days did he park?

a)

additional days	Cost
0	15
1	21
2	27
3	33
4	39
5	45
6	51

b)  $a=14$

$C = 15 + 6a$   
 $= 15 + 6(14)$   
 $= 15 + 84$   
 $= 99$

Hank spent \$99 on parking for 14 additional days

d)  $C = 15 + 6a$   
 $207 = 15 + 6a$   
 $207 - 15 = 15 - 15 + 6a$   
 $192 = 6a$   
 $\frac{192}{6} = \frac{6a}{6}$   
 $32 = a$

If Sentor spent \$207 on parking then he had 32 additional days.

Ex 1)

a) Create a table of values

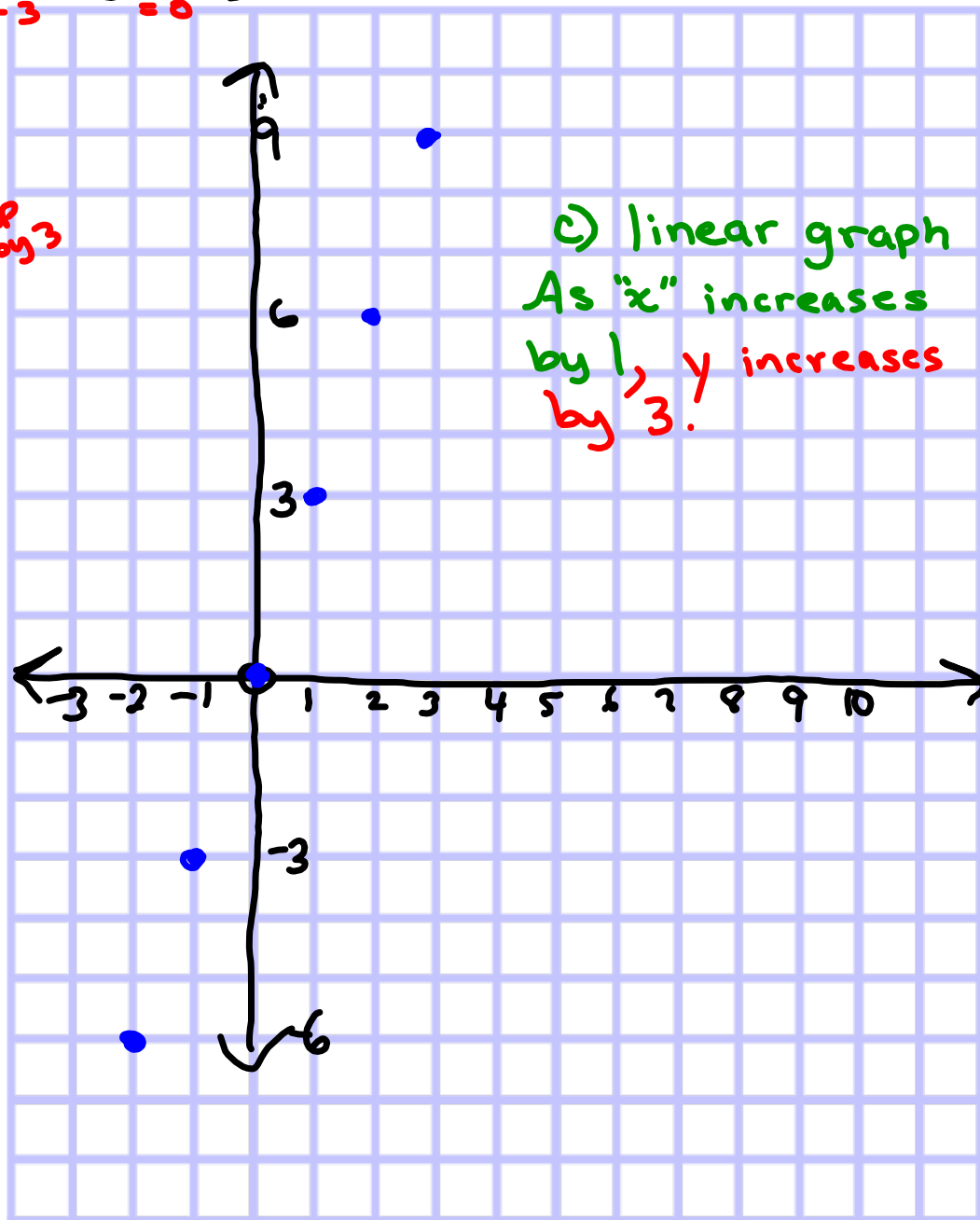
Graph  $y = 3x$

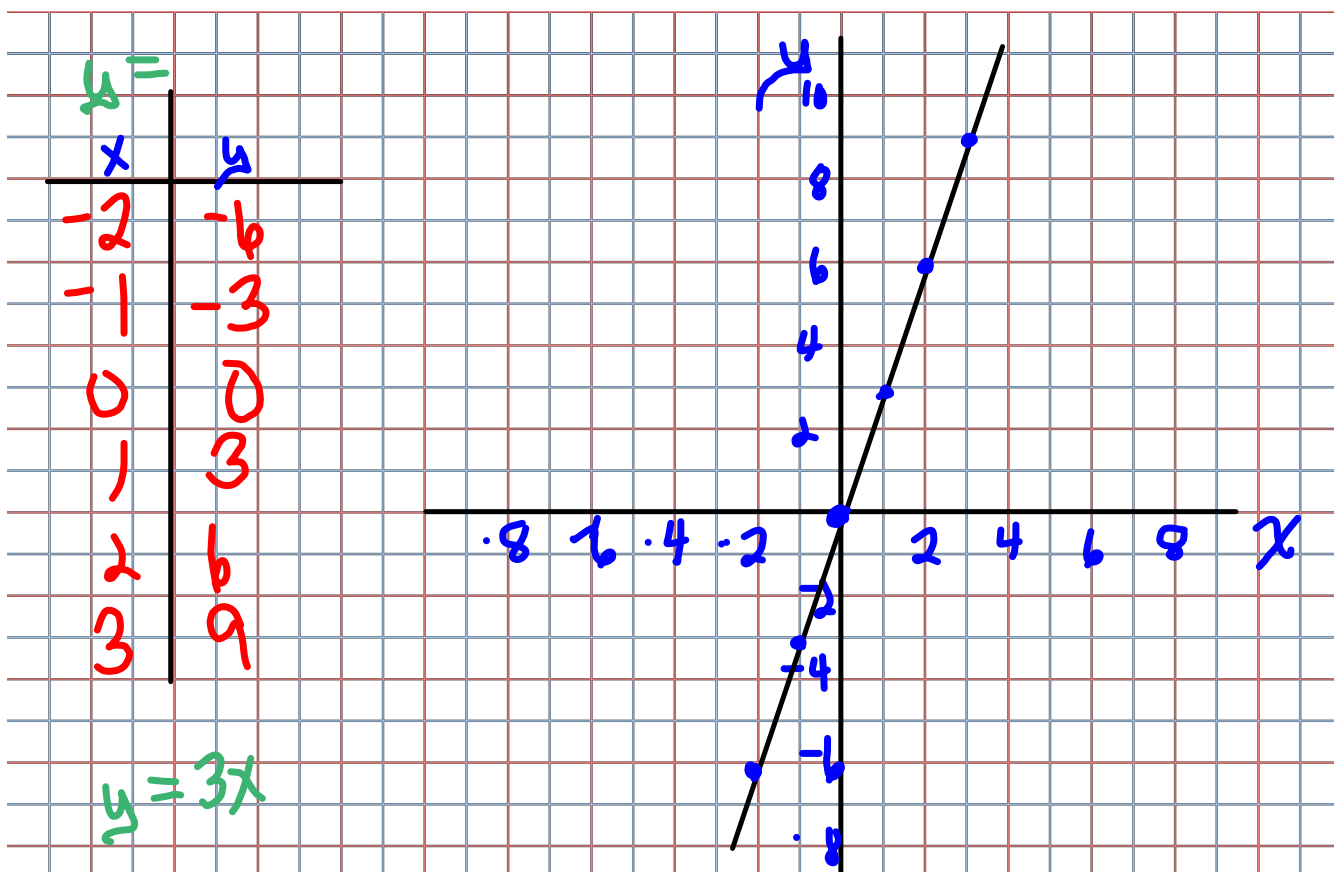
b) Graph the relation

Describe the relations

$$\left. \begin{array}{l} x = -2 \\ y = 3x \\ y = 3(-2) \\ y = -6 \end{array} \right\} \left. \begin{array}{l} x = -1 \\ y = 3x \\ y = 3(-1) \\ y = -3 \end{array} \right\} \left. \begin{array}{l} x = 0 \\ y = 3x \\ y = 3(0) \\ y = 0 \end{array} \right\}$$

x	y
-2	-6
-1	-3
0	0
1	3
2	6
3	9





Graph the following equation:

$y = -2x + 4$

Ex) 2

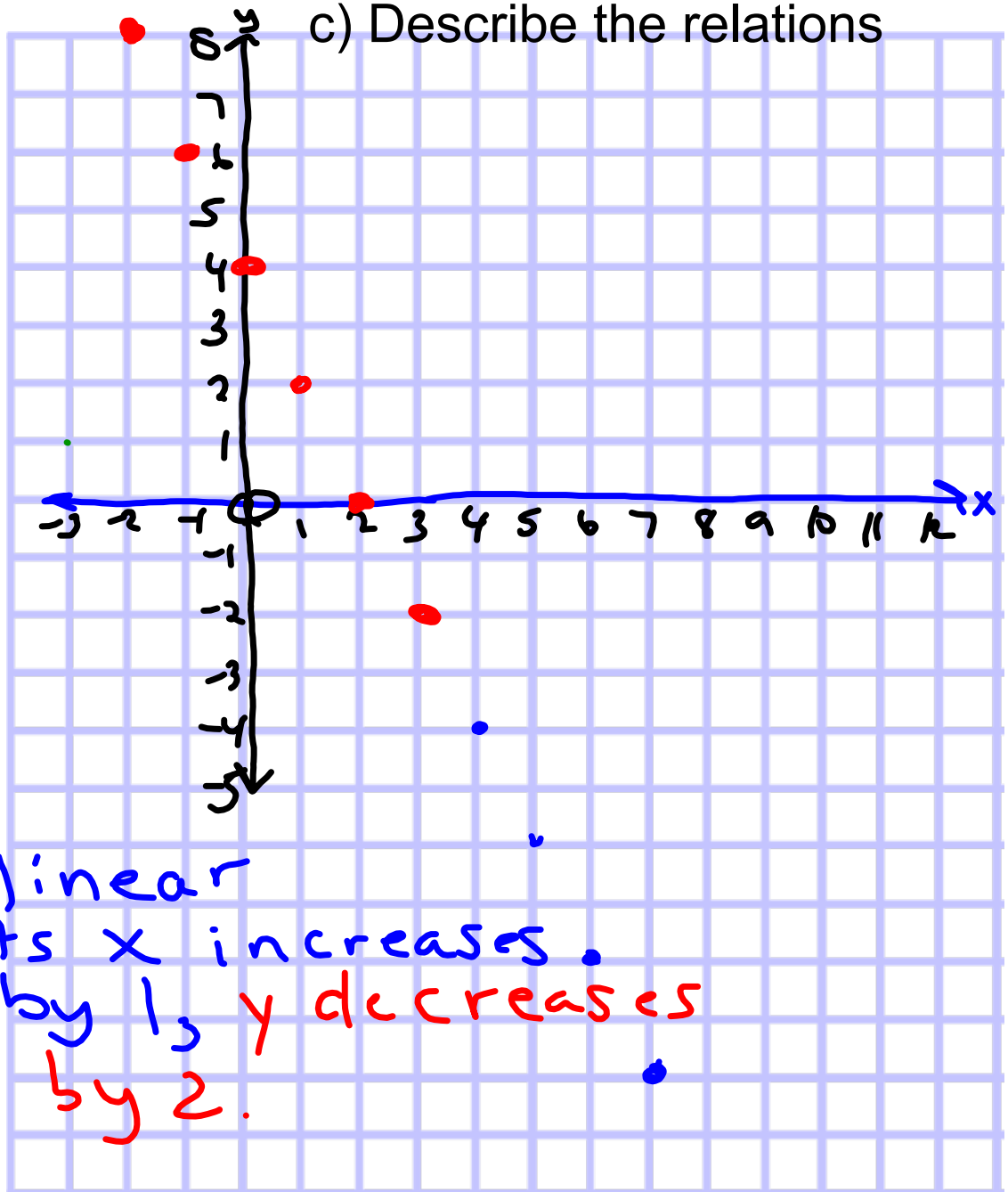
Graph  $y = -2x + 4$ 

a) Create a table of values

b) Graph the relation

c) Describe the relations

x	y
-2	8
-1	6
0	4
1	2
2	0
3	-2

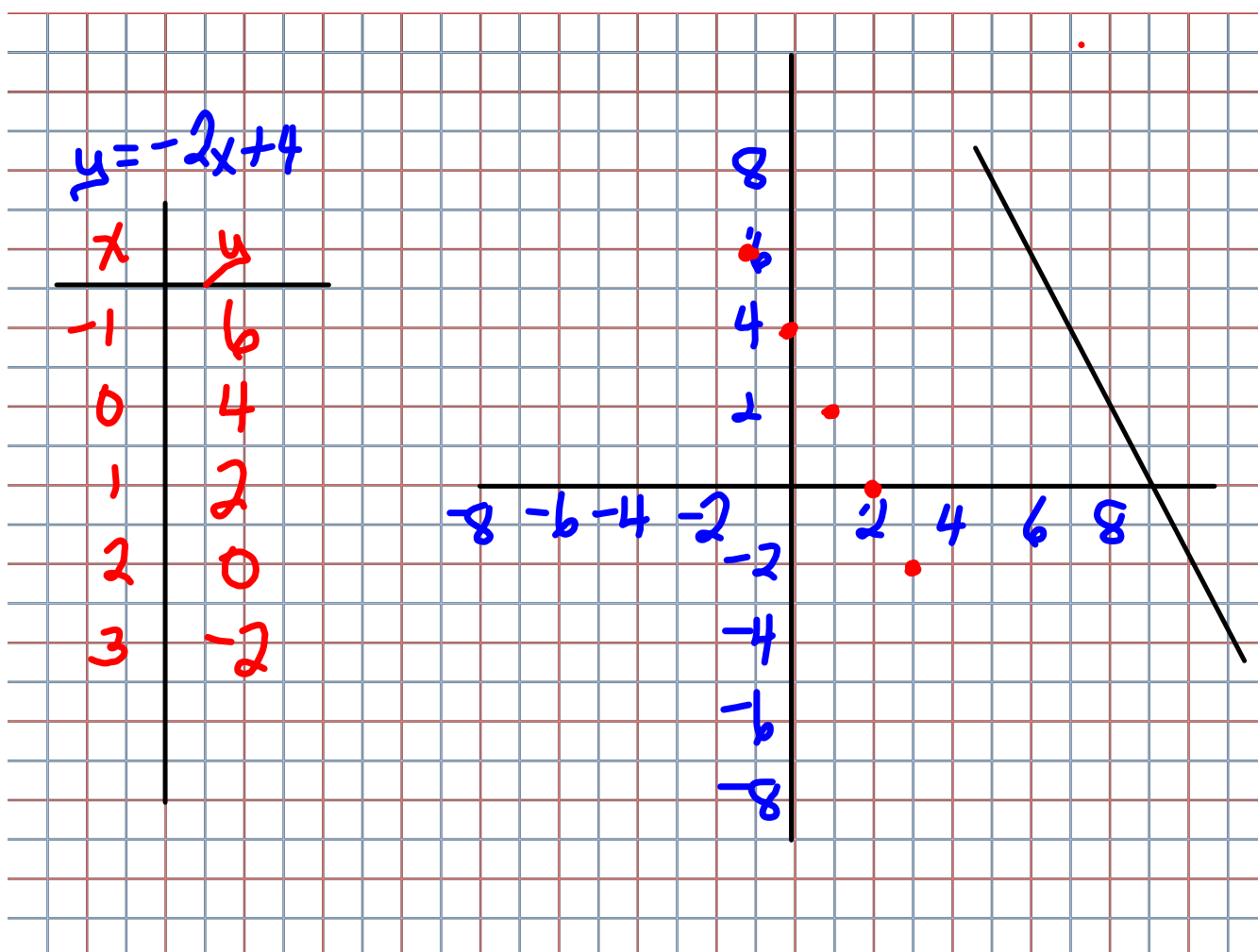


c) linear  
As  $x$  increases  
by 1,  $y$  decreases  
by 2.

$$\begin{aligned}
 x &= -2 \\
 y &= -2x + 4 \\
 y &= -2(-2) + 4 \\
 &\quad +4 \quad +4 \\
 &\quad \quad 8
 \end{aligned}$$

$$\begin{aligned}
 x &= -1 \\
 y &= -2x + 4 \\
 y &= -2(-1) + 4 \\
 &\quad = 2 + 4 \\
 y &= 6
 \end{aligned}$$

$$\begin{aligned}
 x &= 0 \\
 y &= -2x + 4 \\
 y &= -2(0) + 4 \\
 &\quad = 0 + 4 \\
 y &= 4
 \end{aligned}$$



## Discrete vs. Continuous

### For word problems

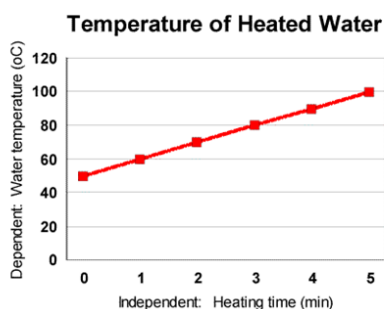
**Discrete** means you do not connect the dots (since you can not have part of your x variable)

ex) Graphing how many people attended a dance. (Can't have half a person)

**Continuous** means you connect the dots (since you can ~~not~~ have part of your x variable)

ex 1) Graphing how many hours. (Can have half a hour)

ex 2)



1. Describe the patterns on the graph.

As number of Slices increase by 1, Cost increases by \$3.

2. What is the cost of one slice of pizza? \$3

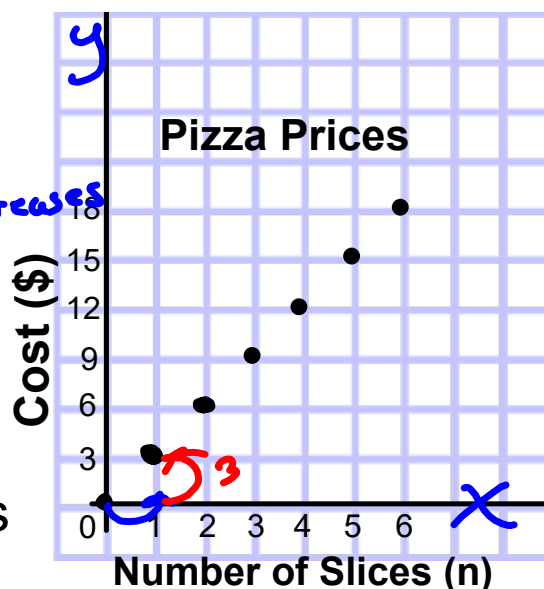
3. What is the relationship between the number of slices and the cost?

$$C = 3n$$

4. Make a table of values from the graph.

5. If 7 slices of pizza are purchased, what is the cost?

$$\begin{aligned} C &= 3n \\ &= 3(7) \\ &= \$21 \end{aligned}$$



x	y
0	0
1	3
2	6
3	9
4	12
5	15
6	18