



Warm Up Grade 8



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

(show work)

a) $(\overset{x}{-2}, \overset{y}{\quad})$

$$y = 2x - 7 \quad \text{Sub in } x = -2$$

$$y = 2(-2) - 7$$

$$y = (-4) - (7)$$

$$y = -11$$

$$\begin{pmatrix} -2, -11 \\ (x, y) \end{pmatrix}$$

b) $(\overset{x}{\quad}, \overset{y}{29})$

$$y = 2x - 7$$

$$29 = 2x - 7$$

$$29^{+7} = 2x - 7^{+7}$$

$$36 = 2x$$

$$\div 2 \quad \div 2$$

$$\boxed{18 = x}$$

$$\begin{pmatrix} x, y \\ (18, 29) \end{pmatrix}$$

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

$$y = 9x - 7$$

$x = 2$
 $9(2) - 7$
 $18 - 7$
 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

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9a)

$$y = -2x + 3$$

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

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

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

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

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

$$\text{a) } (-8, _)$$

$$\begin{aligned} y &= -2x - 8 + 7 \\ &= 16 + 7 \\ &= 23 \end{aligned}$$

$$\text{b) } (12, _)$$

$$\begin{aligned} y &= -2 \times 12 + 7 \\ &= -24 + 7 \\ &= -17 \end{aligned}$$

$$\text{c) } (_, 31)$$

$$\begin{aligned} 31 &= -2x + 7 \\ 31 - 7 &= -2x + 7 - 7 \\ 24 &= -2x \\ \frac{24}{-2} &= \frac{-2x}{-2} \\ -12 &= x \end{aligned}$$

$$\text{d) } (_, -23)$$

$$\begin{aligned} -23 &= -2x + 7 \\ -23 - 7 &= -2x + 7 - 7 \\ -30 &= -2x \\ \frac{-30}{-2} &= \frac{-2x}{-2} \\ 15 &= x \end{aligned}$$

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

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

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

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) 17th 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

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

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

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

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

b) $y = -4x - 5$

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

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

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

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

c) $y = 5x + 8$

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

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

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

$5x+8$
 $5(-1)+8$
 $-5+8$
 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.

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

$-21 = -7x$
 $-7 = -7$
 $3 = x$

$y = -7x + 10$
 $-7(4) + 10$
 $-28 + 10$
 -18

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

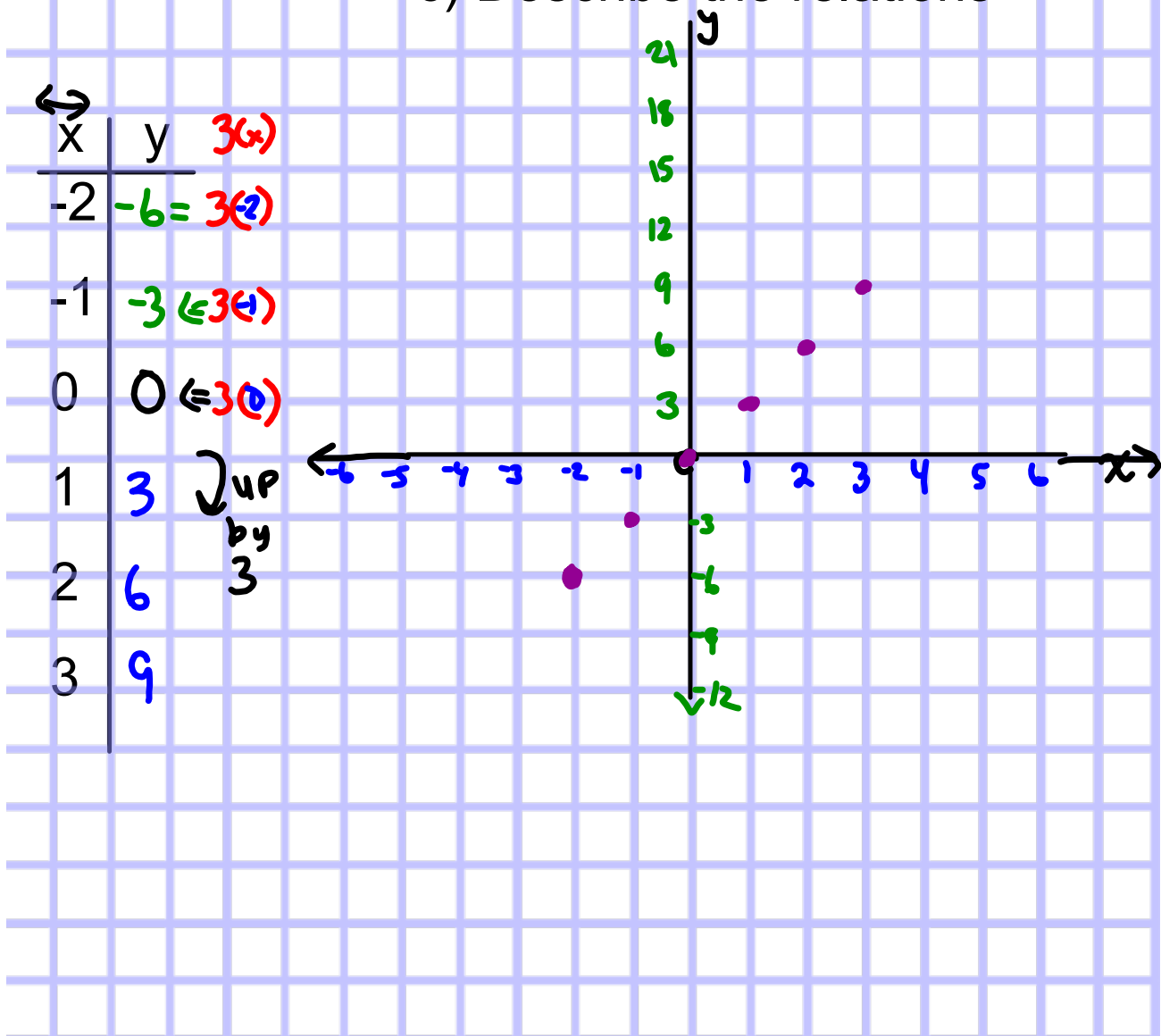
If Sentor spent \$207 on parking then he had 32 additional days.

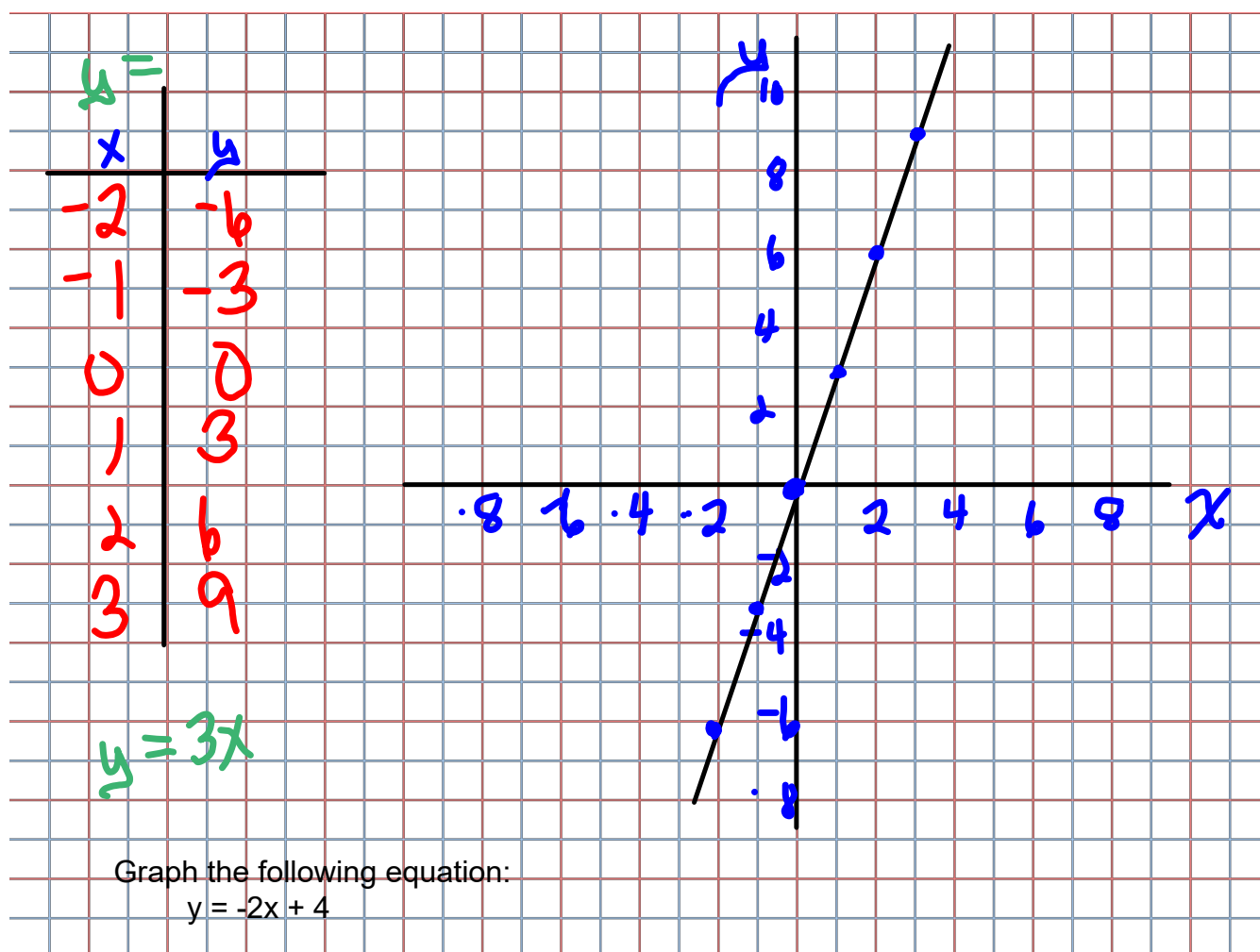
Ex 1) a) Create a table of values

Graph $y = 3x$

b) Graph the relation

c) Describe the relations





Ex) 2

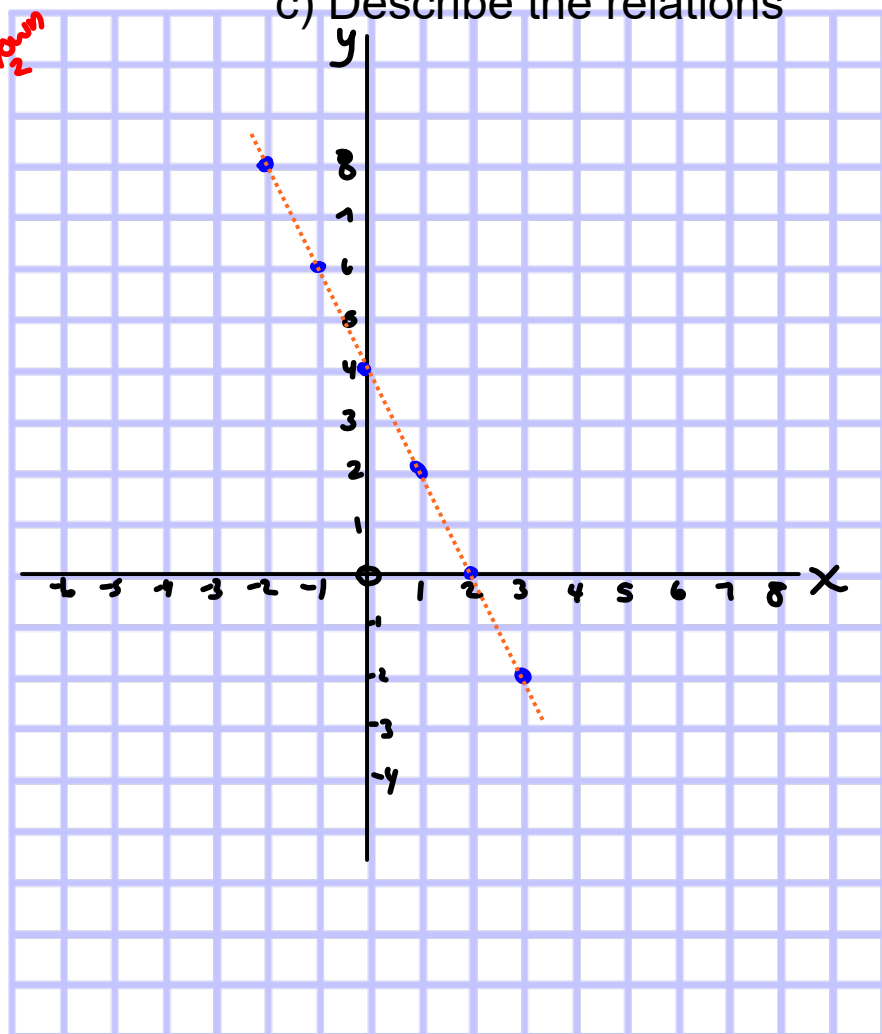
Graph $y = -2x + 4$

a) Create a table of values

b) Graph the relation

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

c) Describe the relations

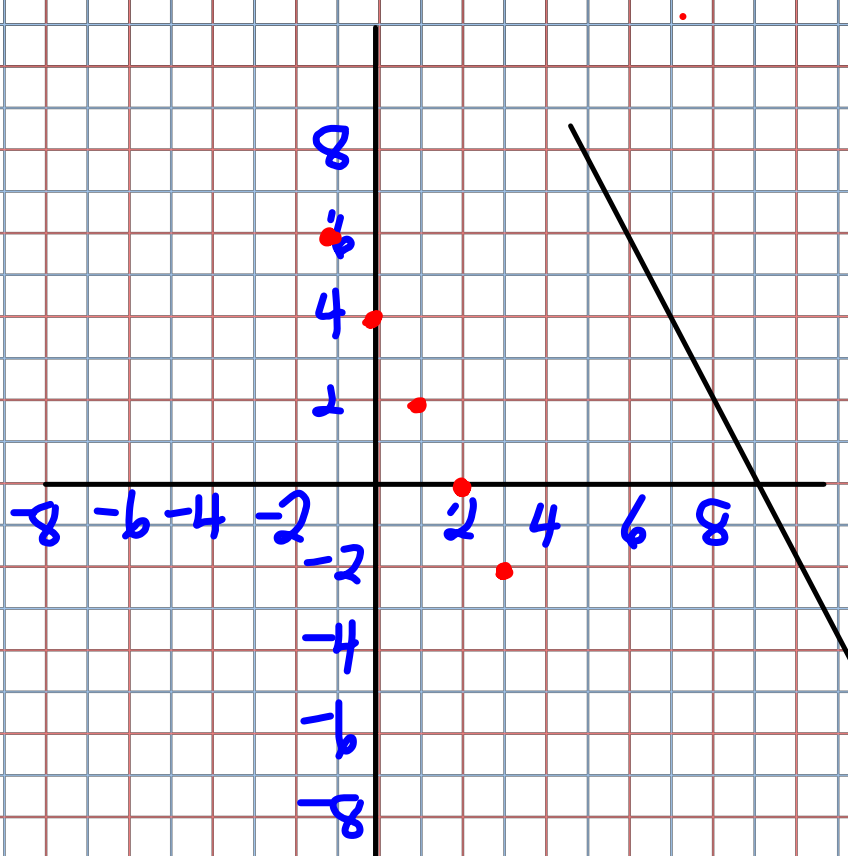


$x = -2$ $y = -2x + 4$ $y = -2(-2) + 4$ $y = 4 + 4$ $y = 8$ $(-2, 8)$	$x = -1$ $y = -2x + 4$ $y = (-2)(-1) + 4$ $y = 2 + 4$ $y = 6$ $(-1, 6)$	$x = 0$ $y = -2x + 4$ $y = (-2)(0) + 4$ $y = 0 + 4$ $y = 4$ $(0, 4)$
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c) The graph looks like a diagonal line. Where x increases by 1 while y decreases by 2.

$$y = -2x + 4$$

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



Discrete vs. Continuous

For word problems

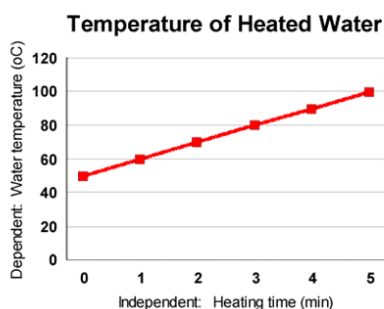
Discrete means you do not connect the dots (since you can not have part of your x variable)

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 # of slices goes up by 1, the Cost goes up by 3*

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

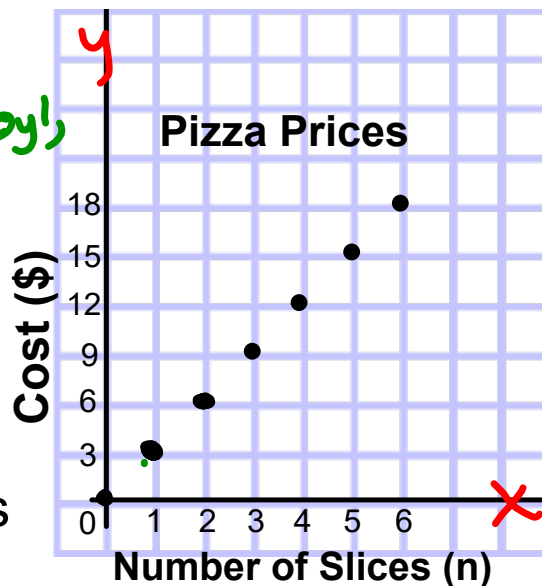
3. What is the relationship between the number of slices and the cost? *Cost = 3n*
y = 3x

4. Make a table of values from the graph.

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

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

It would cost \$21 for 7 pieces.



<i>x(n)</i>	<i>y Cost</i>
0	0
1	3
2	6
3	9
4	12
5	15
6	18

↑ up by 3

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4 a b

Do Table of value

4a) $y = 4x - 1$ b) $y = -3x + 9$

5 a g

↳ Table
↳ graph

x	y
0	-1
1	3
2	7
3	11
4	15
5	19

$4(0) - 1 = -1$
 $4(1) - 1 = 3$
 $4(2) - 1 = 7$
 $4(3) - 1 = 11$
 $4(4) - 1 = 15$
 $4(5) - 1 = 19$

As x increases
by 1, y increases
by 4.

x	y
0	9
1	6
2	3
3	0
4	-3

$-3(0) + 9 = 9$
 $-3(1) + 9 = 6$
 $-3(2) + 9 = 3$
 $-3(3) + 9 = 0$
 $-3(4) + 9 = -3$

As x incr
by 1, y
decrease
by 3