

20.)

a_1	a_2	a_3
1.99	3.98	5.97

$$a_n = a_1 + d(n-1) \quad \boxed{\text{SAME}} \quad a_n = a_1 + (n-1)d$$

$$a_n = 1.99 + 1.99(n-1)$$

$$a_n = \cancel{1.99} + 1.99n - \cancel{1.99}$$

$$a_n = 1.99n$$

$$f(n) = 1.99n$$

3-6 Proportional vs. NonProportional Relationships

$$y = kx$$

direct variation equation
= Proportional

Graph has to pass through
(0,0)

$y = 3x$	
x	y
0	0
1	3
2	6
3	9

Goals	1	2	3	4	5
Donations	75	150	225	300	375

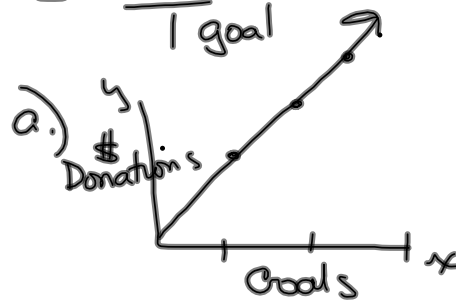
$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{150 - 75}{2 - 1} = \frac{\$75}{1 \text{ goal}}$$

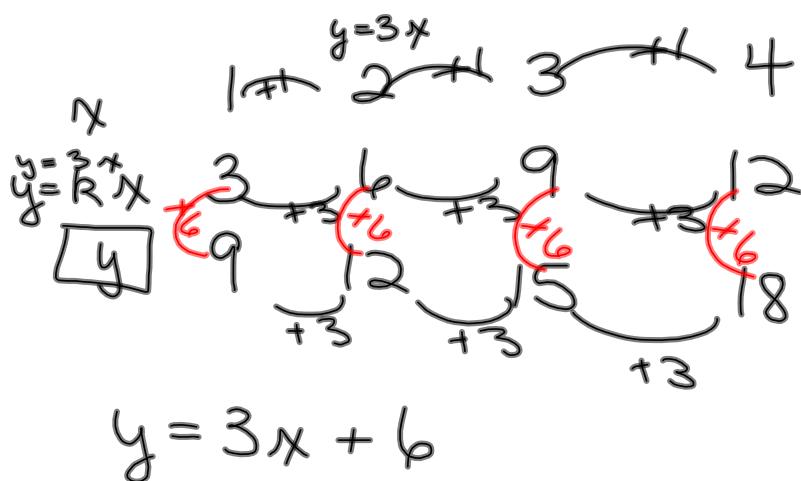
$$y = kx$$

b.) $y = 75x$

c.) $y = 75(12)$

$y = 900$
Donations = \$900.00





If the relationship was proportional.

2 a.

x	0	1	2	3	4
y	4	3	2	1	0

$$y = kx$$

$$y = -1x + 4$$

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{3 - 4}{1 - 0} = \frac{-1}{1} = -1$$

If x was: x 0 1 2

Direct Variation y ~~0~~ ~~-1~~ ~~-2~~

what it should be ($m y = kx$)

Non Proportional y 4 3 2

what it really is!

1. find the slope $m = \frac{y_2 - y_1}{x_2 - x_1}$
2. put that # into the $y = kx$ formula and make a data table
3. For the 3rd row put what the y really is!
4. Compare the change from $y = kx$ to the new row. What did you add? What did you subtract?

2.)

	x	0	1	2	3	4	<u>Coordinate Points</u>
$y=kx$		0	1	2	3	4	$(0, -5)$
$y=lx$		0	1	2	3	4	$(1, -4)$
$y = \text{new } y$		(-5) -5	(-5) -4	(-5) -3	(-5) -2	(-5) -1	$(2, -3)$
						...	$(3, -2)$

• find the slope $m = \frac{-4 - (-5)}{1 - 0} = \frac{-4 + 5}{1} = \frac{1}{1}$

$y = lx$

- what do you have to do from the direct variation formula to get to the actual values in the y (ordered pairs)?
- this is the number that you add or subtract to the direct variation formula

Example: $y = lx - 5$