

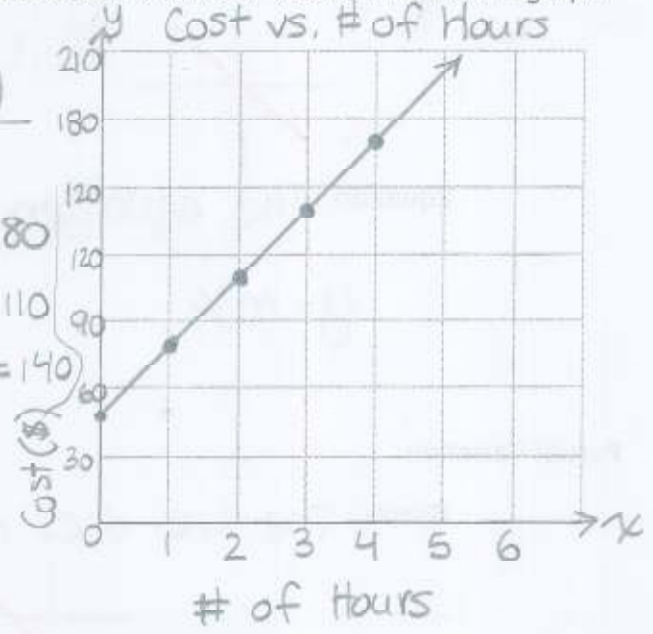
LESSON 5: DIRECT VARIATION VS PARTIAL VARIATION

1) More Graphing Examples

Partial Variation

Example 1 Chris' boss asks him to report on the cost of Compufix service calls. Compufix charges a base fee of \$50 plus \$30/h. Create a table of values and draw a graph.

| x # of hours | y Cost (\$) |
|-------------------|--------------------|
| 0 | 50 |
| 1 | $50 + 30(1) = 80$ |
| 2 | $50 + 30(2) = 110$ |
| 3 | $50 + 30(3) = 140$ |
| 4 | 170 |
| 5 | 200 |



a) Is the relationship linear? **Yes**

b) Write an equation to represent the total cost of hiring Compufix.

First has two terms, 2nd has 1 term

$C = 50 + 30x$

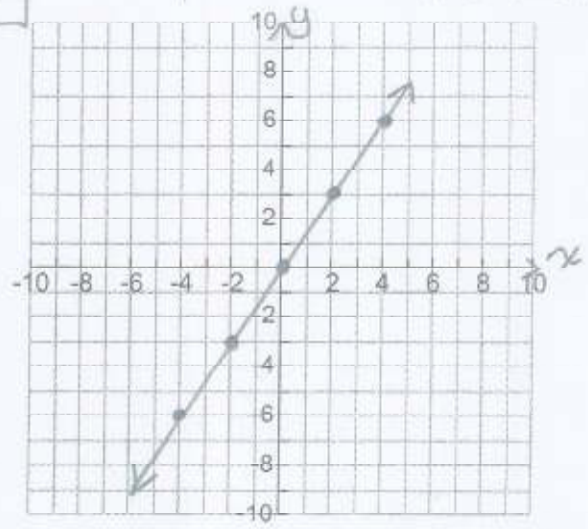
Direct Variation

Example 2: Graph the relationship defined by $2y - 3x = 0$.

| x | y |
|-----|-----------------------------------|
| -4 | $\frac{3}{2} \frac{(-4)}{1} = -6$ |
| -2 | $\frac{3}{2} (-2) = -3$ |
| 0 | $\frac{3}{2} (0) = 0$ |
| 2 | 3 |
| 4 | 6 |

$2y - 3x = 0$
 $2y = 3x$
 $y = \frac{3}{2}x$

choose x values that are multiples of the denominator.



$2y - 3x = 0$

Second graph passes through the origin and the first doesn't.

2) Direct and Partial Variation

Name: _____

Direct Variation:

Graph The line passes through the origin (0,0)



Equation The equation can be written as:

$$y = mx$$

Partial Variation:

Graph The line does not pass through the origin (0,0)



Equation The equation can be written as:

$$y = mx + b \quad (b \neq 0)$$