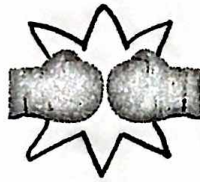
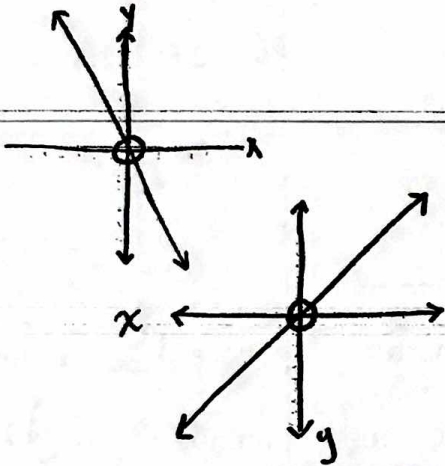
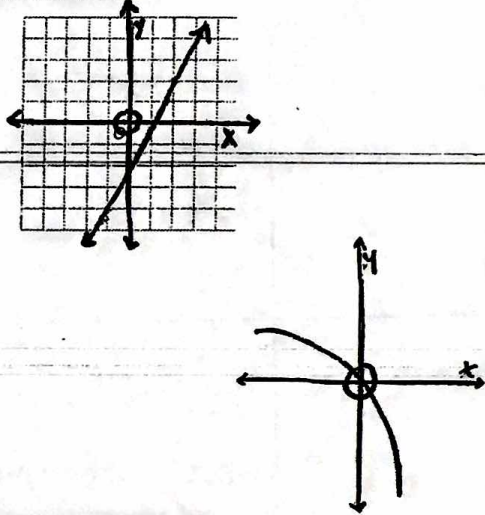


Proportional Relationships VS Non-Proportional Relationships



KEY

	Proportional	NON-Proportional																																
Graph	<p><u>Straight</u> line through the <u>origin</u>. (0,0)</p> <p>Examples:</p> 	<p><u>NOT</u> a straight line through the <u>origin</u>.</p> <p>Examples:</p> 																																
Table	<p>The ratio of $\frac{y}{x}$ is always the <u>Same</u>.</p> <p>Examples:</p> <table border="1"><thead><tr><th>x</th><th>y</th></tr></thead><tbody><tr><td>7</td><td>21</td></tr><tr><td>10</td><td>30</td></tr><tr><td>17</td><td>51</td></tr></tbody></table> <p>$\frac{21}{7} = 3$ $\frac{30}{10} = 3$ $\frac{51}{17} = 3$</p> <table border="1"><thead><tr><th>x</th><th>-10</th><th>2</th><th>12</th></tr></thead><tbody><tr><th>y</th><td>5</td><td>1</td><td>-6</td></tr></tbody></table> <p>$\frac{5}{-10} = -\frac{1}{2}$ $\frac{1}{2} = \frac{1}{2}$ $\frac{-6}{12} = -\frac{1}{2}$</p>	x	y	7	21	10	30	17	51	x	-10	2	12	y	5	1	-6	<p>The ratio of $\frac{y}{x}$ is <u>NOT</u> always the <u>Same</u>.</p> <p>Examples:</p> <table border="1"><thead><tr><th>x</th><th>y</th></tr></thead><tbody><tr><td>6</td><td>10</td></tr><tr><td>8</td><td>14</td></tr><tr><td>10</td><td>18</td></tr></tbody></table> <p>$\frac{10}{6} = 1.6$ $\frac{14}{8} = 1.75$ $\frac{18}{10} = 1.8$</p> <table border="1"><thead><tr><th>x</th><th>-1</th><th>1</th><th>2</th></tr></thead><tbody><tr><th>y</th><td>-6</td><td>-3</td><td>0</td></tr></tbody></table> <p>$\frac{-6}{-1} = 6$ $\frac{-3}{1} = -3$ $\frac{0}{2} = 0$</p>	x	y	6	10	8	14	10	18	x	-1	1	2	y	-6	-3	0
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	Proportional	NON-Proportional
Equation	$y = \underline{k} \underline{x}$ → k is constant of proportionality; slope; "per" → x & y are a coordinate pair Examples:	$y = \underline{m} \underline{x} + \underline{b}$ → m is slope; "per" → b is y-intercept (NOT through origin) → x & y are a coordinate pair Examples:
	$y = 4x$ $y = -0.75x$ $y = \frac{1}{2}x$	$y = 3x + 5$ $y = -0.5x - 1.5$ $y = -8x + 94$
Situation	There is <u>NOT</u> a "no matter what" number; no <u>Flat</u> fee Examples: A new compact car can travel 288 miles on nine gallons of gasoline. How many gallons of gasoline would she need to travel 500 miles? Alice is starting a babysitting business. She decides to charge her clients \$7 per hour to babysit. How much would she charge a family to babysit for 3 ½ hours?	There <u>IS</u> a "no matter what" number; there <u>IS</u> a flat fee Examples: A bakery will decorate a cake for \$7.50 plus \$0.25 per word. How much would it cost to have the message "Congratulations on your retirement, Joan!" written on a cake? A cleaning service charges \$15 per hour to clean houses, with a one-time supply fee of \$80. How much would the cleaning company charge if it took 4 hours to clean a house?