

### TOPIC 3: Patterns in Proportional Reasoning – Block 3 Homework

1. Which of the following tables represents a proportional relationship? Circle true or false for each graph.

<table border="1" style="display: inline-table; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #d9e1f2;">Input</th> <th style="background-color: #d9e1f2;">Output</th> </tr> </thead> <tbody> <tr><td>2</td><td>9</td></tr> <tr><td>4</td><td>17</td></tr> <tr><td>6</td><td>25</td></tr> <tr><td>8</td><td>33</td></tr> </tbody> </table> <div style="display: inline-block; vertical-align: middle; margin-left: 20px;"> <p><b>True</b>      <b>False</b></p> </div>	Input	Output	2	9	4	17	6	25	8	33	<table border="1" style="display: inline-table; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #d9e1f2;">Input</th> <th style="background-color: #d9e1f2;">Output</th> </tr> </thead> <tbody> <tr><td>1</td><td>5</td></tr> <tr><td>2</td><td>9</td></tr> <tr><td>3</td><td>13</td></tr> <tr><td>4</td><td>17</td></tr> </tbody> </table> <div style="display: inline-block; vertical-align: middle; margin-left: 20px;"> <p><b>True</b>      <b>False</b></p> </div>	Input	Output	1	5	2	9	3	13	4	17
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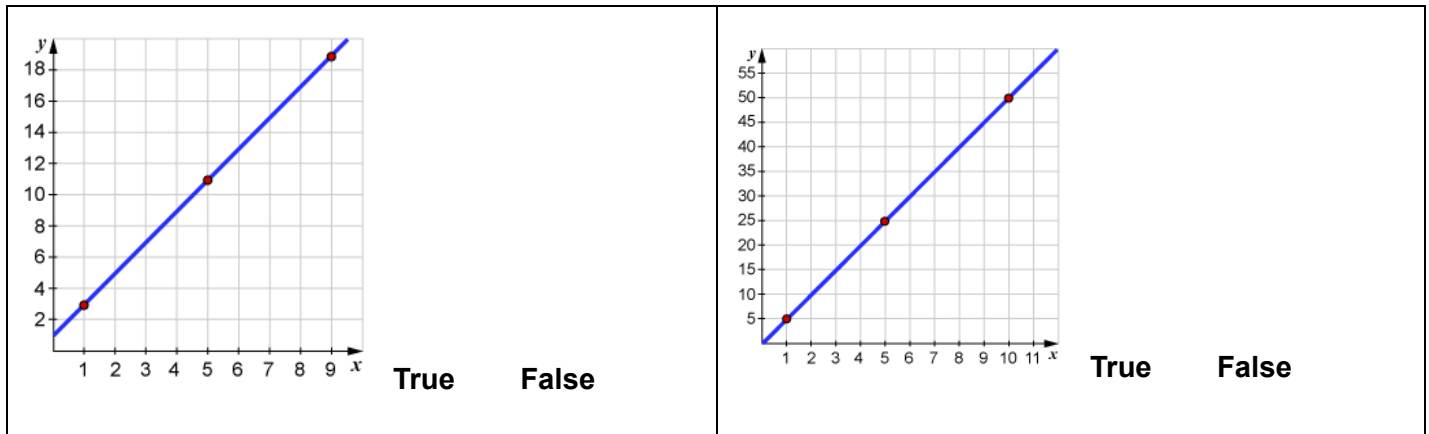
2. As the hours of sunlight shining on a beehive increase, more honey is produced. Here is a set of numbers associated with this relationship:

- An input of 5 hours of sunlight results in an output of 8 ounces of honey.
- An input of 9 hours of sunlight results in an output of 20 ounces of honey.
- An input of 13 hours of sunlight results in an output of 32 ounces of honey.

Which algebraic rule, or equation, produces these pairs of inputs and outputs?

$y = x + 3$ <b>True</b> <b>False</b>	$y = 3x - 7$ <b>True</b> <b>False</b>
$y = 2x + 2$ <b>True</b> <b>False</b>	$y = x + 19$ <b>True</b> <b>False</b>

3. Which of the following represents a proportional relationship? Circle true or false for each possible response.



<table border="1" style="border-collapse: collapse; text-align: center;"> <thead> <tr style="background-color: #d9e1f2;"> <th style="padding: 2px 5px;">x</th> <th style="padding: 2px 5px;">y</th> </tr> </thead> <tbody> <tr> <td style="padding: 2px 5px;">1</td> <td style="padding: 2px 5px;">8</td> </tr> <tr> <td style="padding: 2px 5px;">3</td> <td style="padding: 2px 5px;">24</td> </tr> <tr> <td style="padding: 2px 5px;">6</td> <td style="padding: 2px 5px;">48</td> </tr> </tbody> </table>	x	y	1	8	3	24	6	48	$y = \frac{1}{2}x$	$y = 3x + 4$
x	y									
1	8									
3	24									
6	48									
<p><b>True</b>      <b>False</b></p>	<p><b>True</b>      <b>False</b></p>	<p><b>True</b>      <b>False</b></p>								

4. Consider the graph. Circle true or false for each response.

	<p>There is a unit rate of \$7.50 per shirt.</p>	<p><b>T</b>   <b>F</b></p>
	<p>The relationship is non-proportional.</p>	<p><b>T</b>   <b>F</b></p>
	<p>The constant of proportionality is <math>\frac{1}{7.5}</math>.</p>	<p><b>T</b>   <b>F</b></p>
	<p>The constant of proportionality is 7.5.</p>	<p><b>T</b>   <b>F</b></p>
	<p>The relationship is proportional.</p>	<p><b>T</b>   <b>F</b></p>

5. Quality Clothes makes T-shirts for a one-time fee of \$30 plus \$6 per shirt. Write the algebraic rule, or equation, describing the relationship between the total cost,  $y$ , and the number of T-shirts ordered,  $x$ .