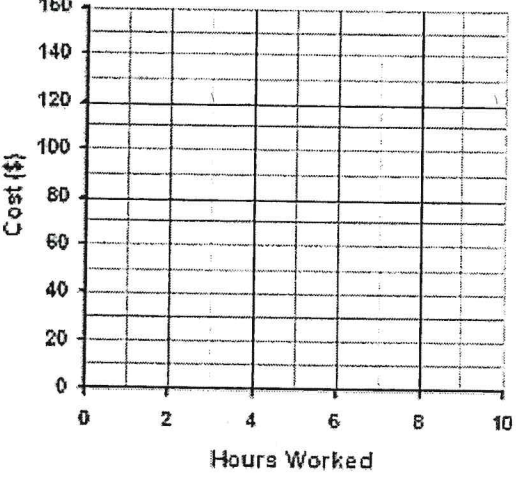


Direct Variation

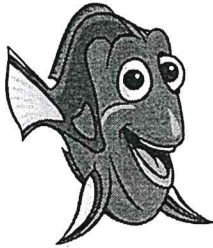
<p><u>Description</u></p> <p>Larry the Landscaper charges \$20 each hour that he works.</p>	<p><u>Table of Values</u></p> <table border="1"><thead><tr><th># of hours</th><th>Cost (\$)</th></tr></thead><tbody><tr><td>0</td><td></td></tr><tr><td>1</td><td></td></tr><tr><td>2</td><td></td></tr><tr><td>3</td><td></td></tr><tr><td>4</td><td></td></tr><tr><td>5</td><td></td></tr><tr><td>6</td><td></td></tr></tbody></table>	# of hours	Cost (\$)	0		1		2		3		4		5		6	
# of hours	Cost (\$)																
0																	
1																	
2																	
3																	
4																	
5																	
6																	
<p>⇒ a relationship between 2 variables in which one of the variables is a constant multiple of the other.</p>																	
<p><u>Graph</u></p> 	<p><u>Equation</u></p> <p>$C = \text{Cost (\\$)}$ $h = \text{\# of hours worked}$</p>																

3 Key Features of a Linear Relation that show a “Direct Variation”:

1. _____
2. _____
3. _____

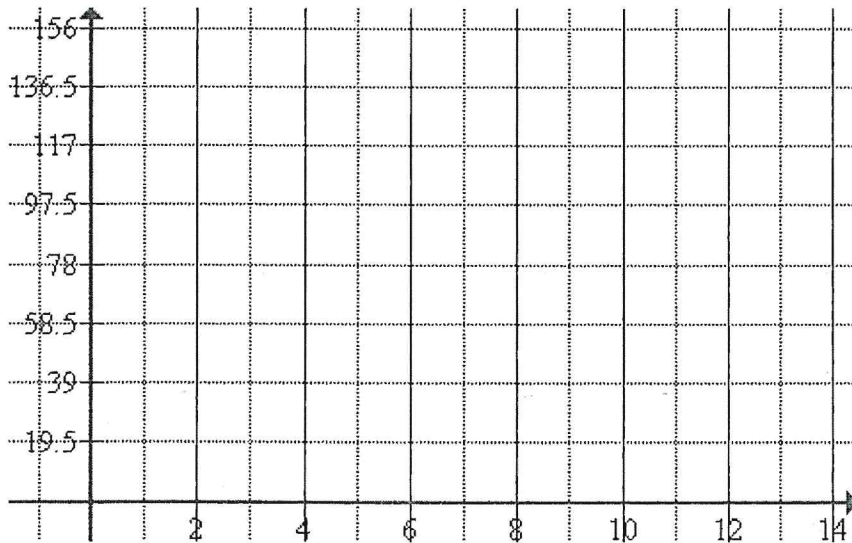
Example #1:

Dory works part-time reading at the young fishy school that Nemo goes to. Her earnings for the past three weeks are shown.



Hours Worked	Pay (\$)	Rate of Pay (\$/h)
5	48.75	
11	107.25	
6	58.50	

- Determine Dory's **hourly rate** of pay for each week.
- Write an equation to represent the amount of money Dory is paid, P , for h hours worked.
- Plot the points and create a graph to model this relationship.

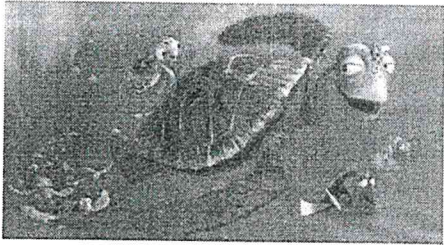


- Use the equation to find Dory's earnings if she works 9 hours? Verify your answer with the graph

- Use the equation to find how many hours Dory must work to earn \$136.50? Verify your answer with the graph.

Example #2

Travelling on Crush's shell, Merlin and Dory's trip to find Nemo went much faster. Together they travelled 27 km. Squirt charted their progress as shown.



Time, t , (h)	Distance, d , (km)	Speed (km/h)
0.5	3	
1.5	9	
2.0	12	

- a) How fast were they traveling? (ie. speed=rate of change)
- b) Write an equation to represent the distance travelled, d , for t hours travelled.
- c) Use the equation to determine how far they traveled after 3.5 hours.
- d) Use the equation to find out how long it took them to travel 14 km.

Direct Variation – Key Concepts

🐠 A **direct variation** is a relationship in which one variable is a _____ of the other.

🐠 The **graph** of a direct variation is a _____ line that passes through the _____

🐠 The equation _____ describes a direct variation between two variables x and y .

🐠 The graph looks like:

