Representing Linear Functions in Different Ways

The cost (C) of hiring Polly the Plumber is shown by the equation **C = 100 + 50n**, where n is the number of hours that she works.

a) Complete the table of values.

Hours	Cost ($)
0	
1	
2	
3	
4	
5	

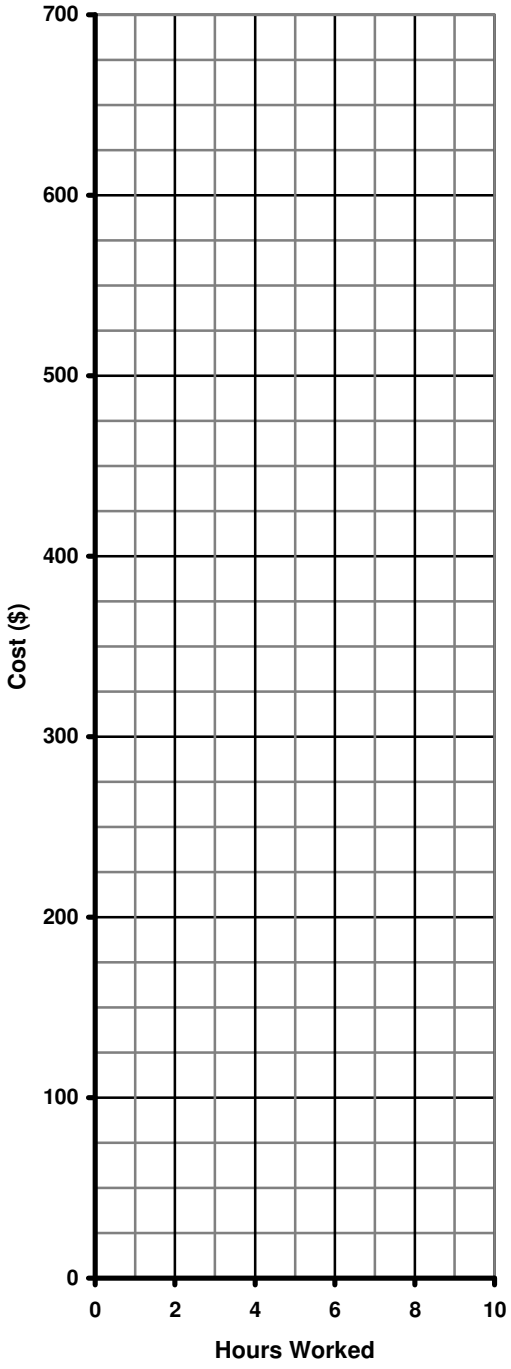
b) Create a scatter plot and draw a line of best fit.

c) Is this an example of direct or partial variation?

d) State the initial value.

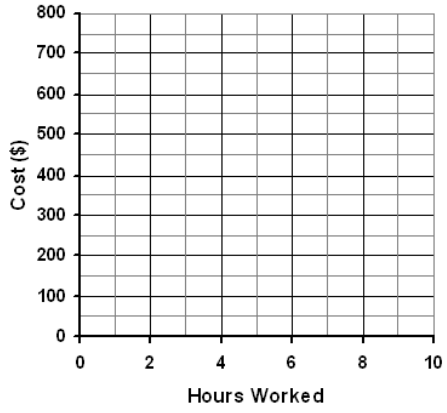
e) Determine the rate of change.

f) Describe the way that Polly gets paid.

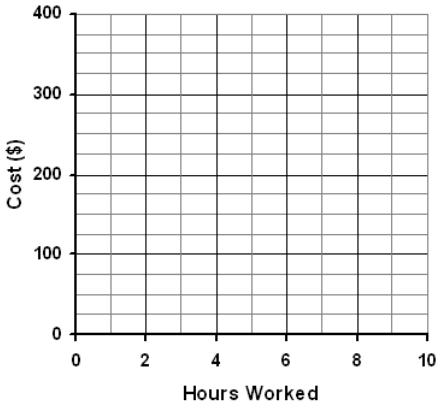


Complete the missing parts of each of the following:

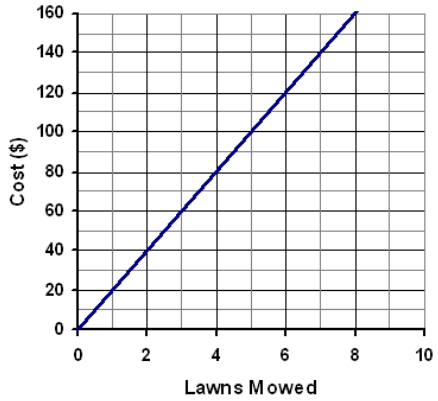
2 The cost of hiring Mary the Mover can be shown the following ways:

Description	Mary the Mover charges a transportation fee of $150 plus $100 per hour.	Equation	
Table	<table><tr><th>Hours</th><th>Cost ($)</th></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>	Graph	

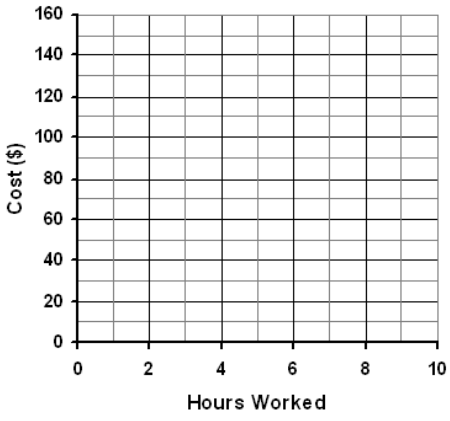
3 The cost of hiring Ernie the Electrician can be shown the following ways.

Description		Equation	
Table	<table><tr><th>Hours</th><th>Cost ($)</th></tr><tr><td>0</td><td>75</td></tr><tr><td>1</td><td>100</td></tr><tr><td>2</td><td>125</td></tr><tr><td>3</td><td>150</td></tr><tr><td>4</td><td>175</td></tr><tr><td>5</td><td>200</td></tr></table>	Graph	

4 The cost of hiring Larry the Lawn Guy can be shown the following ways:

Description		Equation	
Table	<table><tr><th>Lawns</th><th>Cost ($)</th></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>	Graph	

5 The cost of hiring Brian the Babysitter can be shown the following ways:

Description		Equation	C = 5n + 20
Table	<table><tr><th>Hours</th><th>Cost ($)</th></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>	Graph	

Representing Linear Functions in Different Ways

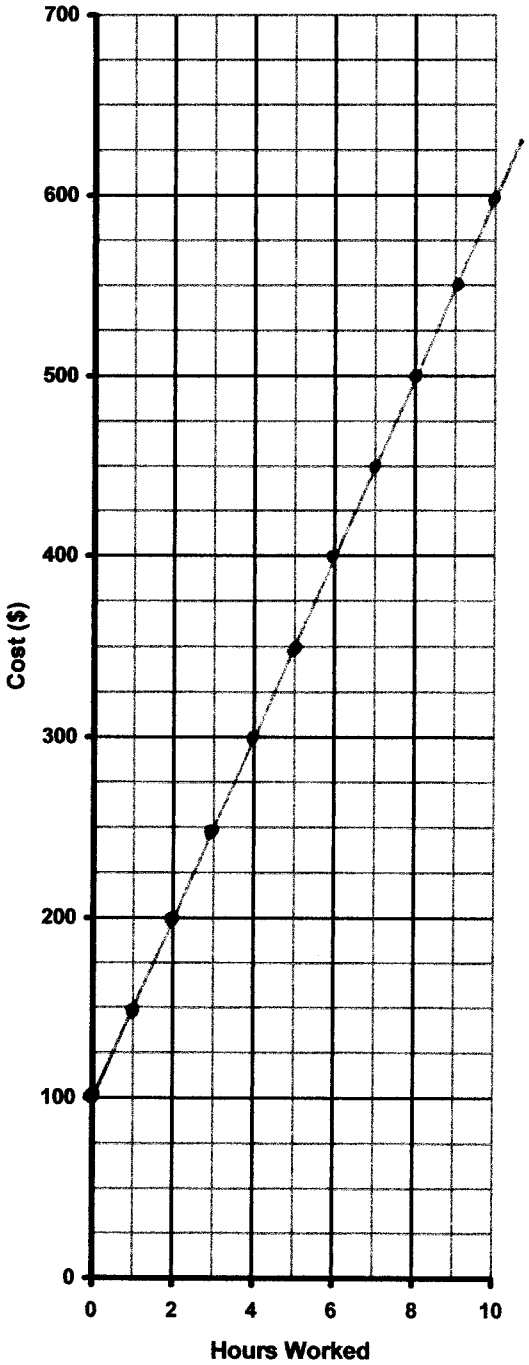
The cost (C) of hiring Polly the Plumber is shown by the equation **C = 100 + 50n**, where n is the number of hours that she works.

a) Complete the table of values.

Hours	Cost ($)	
0	100	100 + 50(0)
1	150	100 + 50(1)
2	200	
3	250	
4	300	+50
5	350	+50

+1 +1

b) Create a scatter plot and draw a line of best fit.



c) Is this an example of direct or partial variation?

Partial

d) State the initial value.

$100.00

e) Determine the rate of change.

$$\text{Rate} = \frac{\Delta y}{\Delta x} = \frac{50}{1} = \$50/\text{hour}$$

f) Describe the way that Polly gets paid.

Polly charges $100.00 to make a house call plus $50.00 per hour.

Complete the missing parts of each of the following:

2 The cost of hiring Mary the Mover can be shown the following ways:

Description: Mary the Mover charges a transportation fee of $150 plus $100 per hour.

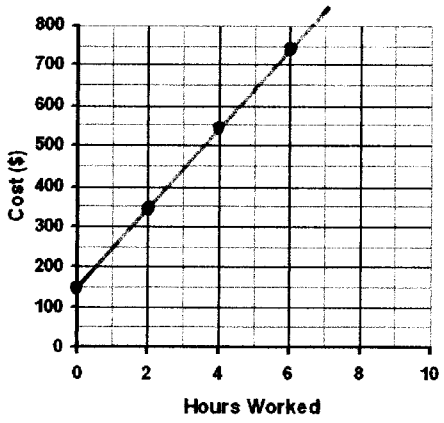
Equation: $C = 150 + 100h$

Table:

Hours	Cost ($)
0	150
2	350
4	550
6	750
8	950
10	1150

use scale on graph to choose these

Graph:



3 The cost of hiring Ernie the Electrician can be shown the following ways.

Description: Ernie charges an initial fee of $75 plus $25 per hour.

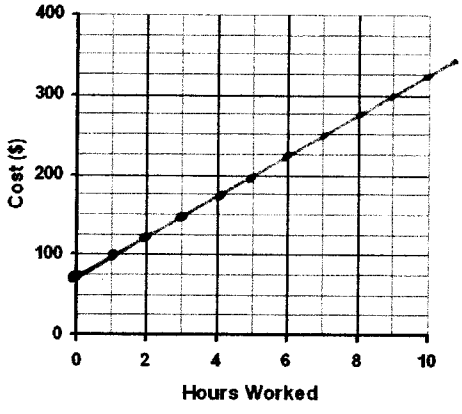
Equation: $C = 75 + 25h$

Table:

Hours	Cost ($)
0	75
1	100
2	125
3	150
4	175
5	200

+1 (0 → 1) +25 (75 → 100)

Graph:



$\text{Rate} = \frac{\Delta y}{\Delta x} = \frac{25}{1} = \$25/\text{hr}$

4 The cost of hiring Larry the Lawn Guy can be shown the following ways:

Description: Larry charges $20 per lawn

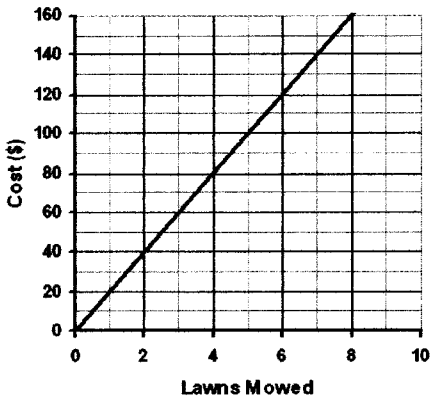
Equation: $C = 0 + 20h$

Table:

Lawns	Cost ($)
0	0
1	20
2	40
3	60
4	80
5	100

+1 (Lawns) +20 (Cost)

Graph:



$$\text{Rate} = \frac{\Delta y}{\Delta x} = \frac{20}{1} = 20$$

5 The cost of hiring Brian the Babysitter can be shown the following ways:

Description: Brian charges an initial fee of $20 plus $5 per hour

Equation: $C = 5n + 20$

Table:

Hours	Cost ($)
0	20
2	30
4	40
6	50
8	60
10	70

Graph: