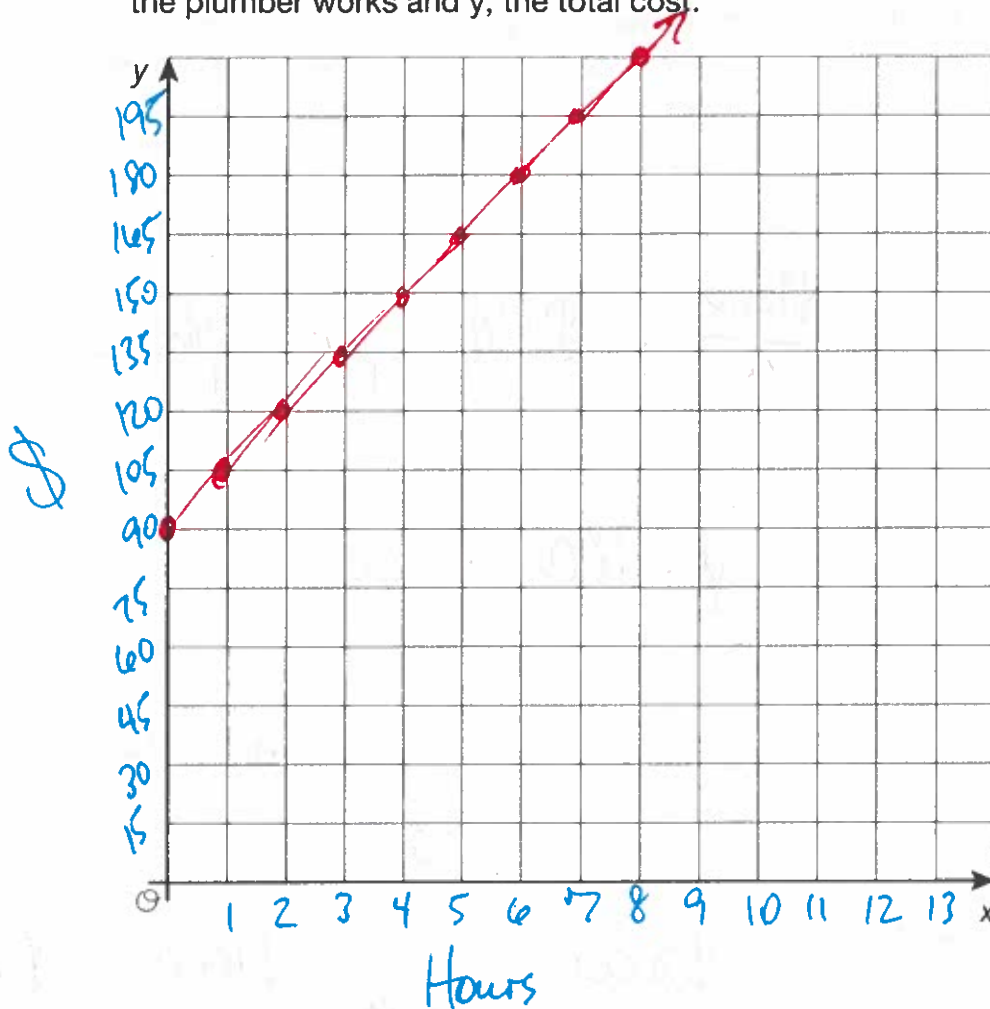


Introduction to Linear Representations

1. A plumber charges \$90 to make a house call plus \$15 for every hour he works.
 - a. Draw a line representing the relationship between x , the number of hours the plumber works and y , the total cost.



- b. Write an equation for this line.

$$y = 15x + 90$$

- c. How much would it cost for the plumber to make a house call that lasts 14 hours? How long would the plumber have to work to make \$114?

$$\begin{aligned} &\underline{14 \text{ hours}} \\ &15 \cdot 14 + 90 \\ &= \$300 \end{aligned}$$

$$\begin{aligned} &\underline{\$114} \\ &114 \\ &- 90 \\ &\hline &24 \div 15 = 1.6 \text{ hours} \end{aligned}$$

2. Kylie is in the business of manufacturing phones. She must pay a daily fixed cost to rent the building and equipment, and also pays a cost per phone produced for materials and labor. The daily fixed costs are \$600 and the total cost of producing 4 phones in a day would be \$1600.

a. What is the cost per phone?

$$\frac{\$1600}{4} = \$400 \text{ per phone}$$

b. Write an equation to represent this situation where y is the total cost of manufacturing x number of phones.

$$y = 400x + 600$$

c. Use the equation to complete the table:

Number of Phones	6	10	1	0
Cost in Dollars	\$3000	\$4600	\$1000	\$600

$$400 \cdot 6 + 600$$

$$\begin{array}{r} 4600 \\ -600 \\ \hline 4000 \\ \hline 400 \end{array}$$

$$400(1) + 600$$