

B: Solving $ax + b = c$, $\frac{x}{a} + b = c$ (Continued)

Word Problems

1. The cost of cable is \$75 per month, plus \$6.59 per speciality channel. How many speciality channels does a person have if they pay \$114.54 per month?

• General "Formula" for when working with money.

Fixed cost + variable cost = Total

Fixed - you pay no matter what.

x - # of speciality channels. ✓

Variable - changes based on "order".

Fixed + Variable = Total ~~amt~~

- variable = x

$$75 + 6.59x = 114.54 \quad \checkmark \quad \begin{array}{l} \$6.59 \text{ per speciality} \\ 6.59 \times x \end{array}$$

Total - Total Amount.

$$\begin{array}{r} 75 \\ -75 \\ \hline 6.59x = 39.54 \end{array}$$

$$\begin{array}{r} 6.59x = 39.54 \\ \hline 6.59 \quad 6.59 \checkmark \\ \hline x = 6 \text{ channels. } \checkmark \end{array}$$

$$x = 6 \text{ channels. } \checkmark$$

The person orders 6 speciality channels. ✓

↗

2. You are paid \$350/wk, plus 6% commission on your sales. If you are paid \$380, what is your total sales?

x - total sales ✓

Commission

fixed + variable = Total

6% of sales

$$350 + 0.06x = 380 \quad \checkmark$$

$$0.06 \times x$$

$$\begin{array}{r} 350 \\ -350 \\ \hline 0.06x = 30 \end{array}$$

$$\begin{array}{r} 0.06x = 30 \\ \hline 0.06 \quad 0.06 \checkmark \\ \hline x = 500 \checkmark \end{array}$$

$$x = \$500 \quad \checkmark$$

My sales are \$500. ✓

Pg. 312 # 13-25, 29, 30 (a, c).