

A number divided by 4 is -7, find the number?

Let  $x = \text{number}$

$$\frac{x}{4} = -7$$

$$x = -28$$

Three, plus a number divided by 5 is 6.  
What is the number?

Let  $X = \text{number}$

$$3 + \frac{X}{5} = 6$$

$$15 + X = 30 - 15$$

$$X = 15$$

One-half of a number is 2.5.

What is the number?

Let number =  $X$

$$\frac{X}{2} = 2.5$$

$$X = 5$$

$$\frac{1}{2}X = 2.5$$

$$X = 5$$

One-third of a number, minus 4, is 2.

What is the number?

Let  $x = \text{number}$

$$\frac{1}{3}x - 4 = 2$$

$\times 3$   $\times 3$   $\times 3$

$$x - 12 = 6$$

$x = 6 + 12$   
 $x = 18$

Five percent of a number is 6.

What is the number?

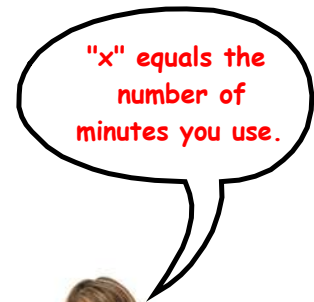
$$\frac{\cancel{0.05}X}{\cancel{0.05}} = \frac{6}{0.05}$$

$$5\% \rightarrow 0.05 \quad X = 120$$

**A cell phone company offers two plans.**

**Plan A :** A monthly fee of \$20.00 plus an additional \$0.10 per minute.

**Plan B :** A monthly fee of \$50.00 plus an additional \$0.02 per minute.



**At how many minutes will both companies cost the same?**


- a) Model the problem with an equation
- b) Solve the problem.
- c) Verify the problem

At how many minutes will both companies cost the same?

**A cell phone company offers two plans.**

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a) Model the problem with an equation

Plan A



Plan B



b) Solve the problem.

$$\rightarrow 20 + 0.10x = 50 + 0.02x$$

$$\rightarrow 20 + 0.10x = 50 + 0.02x$$

$$\rightarrow 0.10x - 0.02x = 50 - 20$$

$$\rightarrow \frac{0.08x}{0.08} = \frac{30}{0.08}$$

$$x = 375 \text{ minutes}$$

At how many minutes will both companies cost the same?

A cell phone company offers two plans.

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c) Verify the problem

**Plan A**

$$\begin{aligned} & 20 + 0.10x \\ = & 20 + 0.10(375) \\ = & 20 + 37.50 \\ = & \$57.50 \end{aligned}$$

**Plan B**

$$\begin{aligned} & 50 + 0.02x \\ = & 50 + 0.02(375) \\ = & 50 + 7.50 \\ = & \$57.50 \end{aligned}$$



Two restaurants charge different rates for catering a party.



Dinner Time!

**Company A:** \$25 plate plus an addition flat fee of \$300

**Company B:** \$50 a plate



When do the two companies charge the same amount???

Let  $x = \text{plates}$

Company A

$$25x + 300$$

Verify your work

Company B

$$50x$$

$$25x + 300 = 50x$$

$$25x - 50x = -300$$

$$\begin{array}{r} -25x = -300 \\ \hline -25 \quad \quad -25 \\ \hline \end{array}$$

$$x = 12 \text{ plates}$$

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