

Solve for x

1. $\frac{2}{3}x + 9 = 13$

$$\begin{aligned} & \frac{2}{3}x + 9 = 13 \\ & \frac{2}{3}x = 4 \\ & x = 6 \end{aligned}$$

2. $3x + 7 - 4 - 9x = -9$

$$\begin{aligned} & -6x + 3 = -9 \\ & -6x = -12 \\ & x = 2 \end{aligned}$$

3. Is 5 a solution to $4x + 6 = 25$?

$$\begin{aligned} & 4(5) + 6 = 25 \\ & 20 + 6 = 25 \\ & 26 \neq 25 \end{aligned}$$

Solving Equation Word Problems

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$$\frac{4n}{4} = \frac{36}{4}$$
$$n = 9 \text{ nights}$$

nights = n

Becky learns 2 new appetizer recipes during each week of culinary school. After how many weeks of culinary school will Becky know a total of 14 appetizer recipes?

Weeks = w

$$\frac{2w}{2} = \frac{14}{2}$$

$$w = 7 \text{ weeks}$$

A company is planning a party. The venue costs \$120 they also have to pay \$15 for every person that attends. If the company has \$1950, how many people can attend?

people = p

$$15p + 120 = 1950$$

$$- 120 \quad - 120$$

$$\frac{15p}{15} = \frac{1830}{15}$$

$$p = 122 \text{ people}$$

$$\begin{array}{r} 122 \\ 15 \overline{) 1830} \\ \underline{15} \\ 33 \\ \underline{30} \\ 30 \\ \underline{30} \\ 0 \end{array}$$

You go to a carnival with \$45. It cost \$3 per ride. How many rides have you gone on when you have \$18 left

$$\begin{array}{r} 45 - 3r = 18 \\ -45 \quad -45 \\ \hline -3r = -27 \\ \frac{-3}{-3} \quad \frac{-27}{-3} \\ \hline r = 9 \end{array}$$

$$\begin{array}{r} 18 + 3r = 45 \\ -18 \quad -18 \\ \hline 3r = 27 \\ \frac{3}{3} \quad \frac{27}{3} \\ \hline r = 9 \end{array}$$

You go to the mall with \$200, but spend \$13 per shirt that you buy. How many shirts did you buy if you have \$135 dollars left?

$$200 - 13s = 135$$

$$s = 5 \text{ shirts}$$

You have \$45 and you babysit and earn \$12 per hour. You are saving up to buy a bike which cost \$225. How many hours do you have to babysit to buy the bike?

$$45 + 12h = 225$$

$$h = 15 \text{ hrs}$$

The sum of three consecutive numbers is 18.
Write an equation and solve for find those three numbers.

$$\textcircled{x} + \underline{x} + 1 + \underline{x} + 2 = 18$$

$$3x + 3 = 18$$

$$- 3 \quad - 3$$

$$\frac{3x}{3} = \frac{15}{3}$$

$$x = 5$$

$$x + x + 1 + x + 2 = 20$$

$$\begin{array}{r} 5 + 6 + 7 \\ 11 + 7 \\ 18 \end{array}$$

You have \$320 and save \$10 each week.
Your brother has \$445 and spends his
income, plus \$15 of his savings each week.
When will you and your brother have the
same amount in savings?

$$320 + 10w = 445 - 15w$$
$$\begin{array}{r} -320 \\ \hline 10w = 125 - 15w \end{array}$$

$$10w = 125 - 15w$$

$$25w = 125$$

$$w = 5 \text{ weeks}$$

