

USING EQUATIONS TO SOLVE WORD PROBLEMS

1 DEFINE A VARIABLE

What are you trying to find?
Use a "let statement" to define a variable.

2 SET UP EQUATION & SOLVE

Use keywords to set up an equation. Then solve!

3 ANSWER IT!

Give exactly what the problem is asking for.

Directions: Define a variable, set up an equation, then solve.

1. Connor deposited \$84 into his checking account. If his new balance is \$451, what was his balance before the deposit?

Let b = old balance

$$\begin{array}{r} b + 84 = 451 \\ -84 \quad -84 \\ \hline b = \$367 \end{array}$$

2. Six adult tickets to a movie at the theater cost \$52.50. Find the price for one ticket.

Let t = price for ticket

$$\begin{array}{r} 6t = 52.50 \\ \underline{\quad\quad} \\ t = \$8.75 \end{array}$$

3. Three-fourths of the 8th graders at Kingston Middle School went on the class trip. If 252 students went on the trip, how many 8th graders are there?

Let g = 8th grade students

$$\frac{4}{3} \cdot \frac{3}{4}g = 252 \cdot \frac{4}{3}$$

$$g = 336 \text{ students}$$

4. After falling 23° F, the temperature is now 51° F. What was the starting temperature?

Let t = starting temp.

$$\begin{array}{r} t - 23 = 51 \\ \underline{\quad\quad} \\ t = 74^\circ \text{F} \end{array}$$

5. Ms. Karen has 7 children in her preschool class. She would like to give each student an equal number of M&M's. If each child got 23 M&M's, how many did she start with?

Let m = # of M&M's

$$7 \cdot \frac{m}{7} = 23 \cdot 7$$

$$m = 161 \text{ m\&M's}$$

6. Braden scored 9 fewer points on his math test than Ava did. If Ava scored an 86, what was Braden's score?

Let B = Braden's score

$$\begin{array}{r} B + 9 = 86 \\ -9 \quad -9 \\ \hline B = 77 \end{array}$$

$$B = 77$$

7. Pocket folders are \$0.39 each at the store. If Carolyn paid \$7.02, how many did she buy?

Let f = # of folders

$$\begin{array}{r} 0.39f = 7.02 \\ \underline{\quad\quad} \\ 0.39 \quad 0.39 \end{array}$$

$$f = 18 \text{ folders}$$

8. Scott takes two-thirds of his body weight and drinks that amount of water in ounces per day. If he drinks 118 ounces each day, what does he weigh?

Let w = Scott's weight

$$\frac{3}{2} \cdot \frac{2}{3}w = 118 \cdot \frac{3}{2}$$

$$w = 177 \text{ lbs}$$

9. Driving at an average speed of 52 mph, how long will it take someone to take a 390 mile road trip?

Let t = time it takes

$$\begin{array}{r} 52t = 390 \\ \hline 52 \quad 52 \end{array}$$

$$t = 7.5 \text{ hours}$$

10. Kate has 79 more envelopes to stamp before she can send off her wedding invitations. If she is sending 234 invitations in all, how many has she stamped so far?

Let s = stamped envelopes

$$\begin{array}{r} s + 79 = 234 \\ -79 \quad -79 \end{array}$$

$$s = 155 \text{ envelopes}$$

11. Jack is two weeks into his diet and now weighs 197 pounds. If he lost 3 pounds the first week and 6 pounds the second week, what was his starting weight?

Let w = starting weight

$$\begin{array}{r} w - 9 = 197 \\ +9 \quad +9 \\ \hline \end{array}$$

$$w = 206 \text{ lbs}$$

12. The perimeter of a square is 86 inches. How long is each side?

Let s = side length

$$\begin{array}{r} 4s = 86 \\ \hline 4 \quad 4 \end{array}$$

$$s = 21.5 \text{ in}$$

13. A plant is 14 inches tall. If it grows 3 inches per year, how many years will it take to reach a height of 38 inches?

Let y = # of years

$$\begin{array}{r} 3y + 14 = 38 \\ -14 \quad -14 \\ \hline \end{array}$$

$$\begin{array}{r} 3y = 24 \\ \hline 3 \quad 3 \end{array}$$

$$y = 8 \text{ years}$$

14. Tessa received \$50 from her Grandma for her birthday. She decided to put this money away and save an additional \$12 per week so she can buy a \$398 tablet. How many weeks will it take her to save?

Let w = weeks to save

$$\begin{array}{r} 12w + 50 = 398 \\ -50 \quad -50 \\ \hline \end{array}$$

$$12w = 348$$

$$w = 29 \text{ weeks}$$

15. One-third of the students in the marching band signed up for the pep band. Then, five students changed their mind. If there are 31 students in the pep band, how many students are in the marching band?

Let m = marching band students

$$\begin{array}{r} \frac{1}{3}m - 5 = 31 \\ +5 \quad +5 \\ \hline \end{array}$$

$$3 \cdot \frac{1}{3}m = 36 \cdot 3$$

$$m = 108 \text{ students}$$

16. Five less than the area of a square is 59 square feet. Find the side length of the square.

Let s = side length

$$\begin{array}{r} s^2 - 5 = 59 \\ +5 \quad +5 \\ \hline \end{array}$$

$$\sqrt{s^2} = \sqrt{64}$$

$$s = 8 \text{ ft}$$