

3.1: “One-Step Equations”  
“I WILL ...  
Solve One-Step Equations.”

I. Steps

- A. Write the equation
- B. Draw a line in the middle of the equal sign
- C. Take the opposite to cancel
- D. Solve

II. Model Problems

Ex 1: Solve $x + 5 = 7$	Ex 2: Solve $x - 4 = -9$
Your Turn: Solve $14 = x - 13$	Ex 3: Solve $-5x = 25$

Ex 4: Solve $\frac{3}{4}x = 21$	Ex 5: Solve $\frac{x}{4} = 5$	Your Turn: Solve $-\frac{2x}{7} = 4$
Ex 6: In the 2004 Olympics, Shawn Crawford won the 200 meters dash. His winning time was 19.79 seconds. Find his average speed to the nearest tenth of a meter per second.		Your Turn: In the 2004 Summer Olympics, Inge de Bruijn won the 50-mile freestyle. Her winning time was 24.58 seconds. Find the average swimming speed to the nearest thousandth of a meter per second.

Assignment: Pg 138: 16-52 even, 56

16. **TAKS REASONING** What is the solution of  $22 + v = -65$ ?

- (A) -87      (B) -43      (C) 43      (D) 87

**SOLVING MULTIPLICATION AND DIVISION EQUATIONS** Solve the equation.

Check your solution.

17.  $5g = 20$       18.  $-4q = 52$       19.  $48 = 8c$   
 20.  $-108 = 9j$       21.  $15 = -h$       22.  $187 = -17r$   
 23.  $\frac{y}{3} = 5$       24.  $\frac{m}{2} = 14$       25.  $8 = \frac{x}{6}$   
 26.  $7 = \frac{t}{-7}$       27.  $-11 = \frac{z}{-2}$       28.  $-3 = \frac{d}{14}$

**ERROR ANALYSIS** Describe and correct the error in solving the equation.

29.

$$\begin{aligned} x + 3.0 &= 2.3 \\ x + 3.0 - 3.0 &= 2.3 + 3.0 \\ x &= 6.1 \end{aligned}$$

30.

$$\begin{aligned} \frac{x}{3} &= 27 \\ 3 \cdot \frac{x}{3} &= \frac{27}{3} \\ x &= 9 \end{aligned}$$

**SOLVING EQUATIONS** Solve the equation. Check your solution.

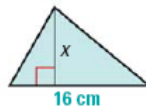
31.  $b - 0.4 = 3.1$       32.  $-3.2 + z = -7.4$       33.  $-5.7 = w - 4.6$   
 34.  $-6.1 = p + 2.2$       35.  $8.2 = -4g$       36.  $-3.3a = 19.8$   
 37.  $\frac{3}{4} = \frac{1}{8} + v$       38.  $\frac{n}{4.6} = -2.5$       39.  $-0.12 = \frac{y}{-0.5}$   
 40.  $\frac{1}{2}m = 21$       41.  $\frac{1}{3}c = 32$       42.  $-7 = \frac{1}{5}x$   
 43.  $\frac{3}{2}k = 18$       44.  $-21 = -\frac{3}{5}t$       45.  $-\frac{2}{7}v = 16$   
 46.  $\frac{8}{5}x = \frac{4}{15}$       47.  $\frac{1}{3}y = \frac{1}{5}$       48.  $-\frac{4}{3} = \frac{2}{3}z$

**GEOMETRY** The rectangle or triangle has area  $A$ . Write and solve an equation to find the value of  $x$ .

49.  $A = 54 \text{ in.}^2$



50.  $A = 72 \text{ cm}^2$



**CHALLENGE** Find the value of  $b$  using the given information.

51.  $4a = 6$  and  $b = a - 2$       52.  $a - 6.7 = 3.1$  and  $b = 5a$

56. **WHEELCHAIRS** The van used to transport patients to and from a rehabilitation facility is equipped with a wheelchair lift. The maximum lifting capacity for the lift is 300 pounds. The wheelchairs used by the facility weigh 55 pounds each. What is the maximum weight of a wheelchair occupant who can use the lift?