# Practice 1-3

**Solving Equations**

**Solve each formula for the indicated variable.**

**1.** $V = \frac{\pi}{3} r^2 h$, for $h$

**2.** $S = L(1 - r)$, for $r$

**3.** $S = \ell w + wh + \ell h$, for $w$

**Solve for $x$. State any restrictions on the variables.**

**4.** $\frac{4}{9}(x + 3) = g$

**5.** $a(x + c) = b(x - c)$

**6.** $\frac{x + 3}{t} = t^2$

**7.** Two brothers are saving money to buy tickets to a concert. Their combined savings is $55. One brother has $15 more than the other. How much has each saved?

**8.** The sides of a triangle are in the ratio 5 : 12 : 13. What is the length of each side of the triangle if the perimeter of the triangle is 15 in.?

**9.** Find three consecutive numbers whose sum is 126.

**Solve each equation.**

**10.** $\frac{1}{2}(x - 3) + \left(\frac{3}{2} - x\right) = 5x$

**11.** $5w + 8 - 12w = 16 - 15w$

**12.** $7y + 5 = 6y + 11$

**13.** $1.2(x + 5) = 1.6(2x + 5)$

**14.** $t - 3\left(t + \frac{4}{3}\right) = 2t + 3$

**15.** $0.5(c + 2.8) - c = 0.6c + 0.3$

**16.** $3(x + 1) = 2(x + 11)$

**17.** $\frac{u}{5} + \frac{u}{10} - \frac{u}{6} = 1$

**18.** Mike and Adam left a bus terminal at the same time and traveled in opposite directions. Mike's bus was in heavy traffic and had to travel 20 mi/h slower than Adam's bus. After 3 hours, their buses were 270 miles apart. How fast was each bus going?

**19.** Two trains left a station at the same time. One traveled north at a certain speed and the other traveled south at twice the speed. After 4 hours, the trains were 600 miles apart. How fast was each train traveling?

**20.** Find four consecutive odd integers whose sum is 336.

**21.** The length of a rectangle is 5 cm greater than its width. The perimeter is 58 cm. Find the dimensions of the rectangle.