

3-8

Practice

Solving Equations and Formulas

Solve each equation or formula for the variable specified.

1. $d = rt$, for r

2. $6w - y = 2z$, for w

3. $mx + 4y = 3c$, for x

4. $9s - 5g = -4u$, for s

5. $ab + 3c = 2d$, for b

6. $2p = kx - q$, for x

7. $\frac{2}{3}m + a = a + c$, for m

8. $\frac{2}{5}h + g = d$, for h

9. $\frac{2}{3}y + v = s$, for y

10. $\frac{3}{4}a - q = k$, for a

11. $\frac{rx + 9}{5} = h$, for x

12. $\frac{3b - 4}{2} = c$, for b

13. $2w - y = 7w - 2$, for w

14. $3\ell + y = 5 + 5\ell$, for ℓ

Write an equation and solve for the variable specified.

15. Three times a number s plus 4 times a number y is 1 more than 6 times the number s .
Solve for s .

16. Five times a number k minus 9 is two thirds of a number j . Solve for j .

ELECTRICITY For Exercises 17 and 18, use the following information.

The formula for Ohm's Law is $E = IR$, where E represents voltage measured in volts, I represents current measured in amperes, and R represents resistance measured in ohms.

17. Solve the formula for R .

18. Suppose a current of 0.25 ampere flows through a resistor connected to a 12-volt battery.
What is the resistance in the circuit?

MOTION For Exercises 19 and 20, use the following information.

In *uniform circular motion*, the speed v of a point on the edge of a spinning disk is $v = \frac{2\pi}{T}r$, where r is the radius of the disk and T is the time it takes the point to travel once around the circle.

19. Solve the formula for r .

20. Suppose a merry-go-round is spinning once every 3 seconds. If a point on the outside edge has a speed of 12.56 feet per second, what is the radius of the merry-go-round?
(Use 3.14 for π .)

3-9 Skills Practice

Weighted Averages

SEASONING For Exercises 1–4, use the following information.

A health food store sells seasoning blends in bulk. One blend contains 20% basil. Sheila wants to add pure basil to some 20% blend to make 16 ounces of her own 30% blend. Let b represent the amount of basil Sheila should add to the 20% blend.

- Complete the table representing the problem.

	Ounces	Amount of Basil
20% Basil Blend		
100% Basil		
30% Basil Blend		

- Write an equation to represent the problem.
- How many ounces of basil should Sheila use to make the 30% blend?
- How many ounces of the 20% blend should she use?

HIKING For Exercises 5–7, use the following information.

At 7:00 A.M., two groups of hikers begin 21 miles apart and head toward each other. The first group, hiking at an average rate of 1.5 miles per hour, carries tents, sleeping bags, and cooking equipment. The second group, hiking at an average rate of 2 miles per hour, carries food and water. Let t represent the hiking time.

- Copy and complete the table representing the problem.

	r	t	$d = rt$
First group of hikers			
Second group of hikers			

- Write an equation using t that describes the distances traveled.
- How long will it be until the two groups of hikers meet?

SALES For Exercises 8 and 9, use the following information.

Sergio sells a mixture of Virginia peanuts and Spanish peanuts for \$3.40 per pound. To make the mixture, he uses Virginia peanuts that cost \$3.50 per pound and Spanish peanuts that cost \$3.00 per pound. He mixes 10 pounds at a time.

- How many pounds of Virginia peanuts does Sergio use?
- How many pounds of Spanish peanuts does Sergio use?