

## 9.R.4 Exercises

### Concept Check

**True/False.** Determine whether each statement is true or false. If a statement is false, explain how it can be changed so the statement will be true. (**Note:** There may be more than one acceptable change.)

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1. When using formulas, typically it does not matter if capital or lower case letters are used:  $A = a$ ,  $C = c$ , etc.
2. If the perimeter and length are known,  $P = 2l + 2w$  can be used to find the width of a rectangle.
3. Rate of interest is stated as an annual rate in percent form.

### Practice

Solve each formula for the indicated variable.

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4.  $P = a + b + c$ ; solve for  $b$ .
5.  $P = 3s$ ; solve for  $s$ .
6.  $I = Prt$ ; solve for  $t$ .
7.  $A = P(1 + rt)$ ; solve for  $r$ .

## Applications

In the following application problems, read the descriptions carefully and then substitute the values given in the problem for the corresponding variables in the formulas. Evaluate the resulting expression for the unknown variable.

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### Velocity

If an object is shot upward with an initial velocity  $v_0$  in feet per second, the velocity  $v$  in feet per second is given by the formula  $v = v_0 - 32t$ , where  $t$  is time in seconds. ( $v_0$  is read “ $v$  sub zero.” The  $_0$  is called a subscript.)

8. An object projected upward with an initial velocity of 106 feet per second has a velocity of 42 feet per second. How many seconds have passed?

### Investments

The total amount of money in an account with  $P$  dollars invested in it is given by the formula  $A = P + Prt$ , where  $r$  is the rate expressed as a decimal and  $t$  is time (one year or part of a year).

9. If \$1000 is invested at 6% interest, find the total amount in the account after 6 months.

### Cost

The total cost  $C$  of producing  $x$  items can be found by the formula  $C = ax + k$ , where  $a$  is the cost per item and  $k$  is the fixed costs (rent, utilities, and so on).

10. Find the total cost of producing 30 items if each costs \$15 and the fixed costs are \$580.