

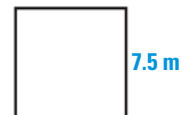
45. **TX TAKS REASONING** Let  $b$  be the number of tokens you bought at an arcade, and let  $u$  be the number you have used. Which expression represents the number of tokens remaining?
- (A)  $b + u$       (B)  $b - u$       (C)  $bu$       (D)  $\frac{b}{u}$
46. **COMPARING POWERS** Let  $x$  and  $y$  be whole numbers greater than 0 with  $y > x$ . Which has the greater value,  $3^x$  or  $3^y$ ? *Explain.*
47. **CHALLENGE** For which whole number value(s) of  $x$  greater than 0 is the value of  $x^2$  greater than the value of  $2^x$ ? *Explain.*

## PROBLEM SOLVING

### EXAMPLE 2

on p. 3  
for Exs. 48–50

48. **GEOMETRY** The perimeter of a square with a side length of  $s$  is given by the expression  $4s$ . What is the perimeter of the square shown?



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49. **LEOPARD FROG** You can estimate the distance (in centimeters) that a leopard frog can jump using the expression  $13l$  where  $l$  is the frog's length (in centimeters). What distance can a leopard frog that is 12.5 centimeters long jump?

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50. **MULTI-STEP PROBLEM** Jen was the leading scorer on her soccer team. She scored 120 goals and had 20 assists in her high school career.
- The number  $n$  of points awarded for goals is given by  $2g$  where  $g$  is the number of goals scored. How many points did Jen earn for goals?
  - The point total is given by  $n + a$  where  $a$  is the number of assists. Use your answer from part (a) to find Jen's point total.

### EXAMPLE 5

on p. 4  
for Exs. 51–52

51. **MULTI-STEP PROBLEM** You are buying a tank for three fish. You have a flame angel that is 3.5 inches long, a yellow sailfin tang that is 5.5 inches long, and a coral beauty that is 3 inches long. The area (in square inches) of water surface the fish need is given by the expression  $12f$  where  $f$  is the sum of the lengths (in inches) of all the fish in the tank.
- What is the total length of the three fish?
  - How many square inches of water surface do the fish need?

52. **TX TAKS REASONING** For a snow sculpture contest, snow is packed into a cube-shaped box with an edge length of 8 feet. The box is frozen and removed, leaving a cube of snow. One cubic foot of the snow weighs about 30 pounds. You can estimate the weight (in pounds) of the cube using the expression  $30V$  where  $V$  is the volume (in cubic feet) of the snow. About how much does the uncarved cube weigh?

- (A) 240 pounds      (B) 1920 pounds  
(C) 15,360 pounds      (D) 216,000 pounds

