Additional Practice

1. Use equations relating to building and cost plans for the Wild World climbing wall to answer parts (a)–(d).

   a. The equation $B = 1 + 3n$ tells the number of beams required to build a frame of n sections. How many sections can be built with 79 beams?

   b. The equation $C = 100 + 300n$ tells the cost of building a frame of n sections. How many sections can be built for a cost of $4,000? How high will that wall be?

   c. The equation $A = 4n$ tells the area of a frame with n sections. How many sections must be built to give a climbing wall with an area of 96 square meters?

   d. The equation $L = 4n + 2$ gives the length of the light string needed for side and top edges of a climbing wall with n sections in its frame. What size frame (number of sections) can be lighted with a string that is 38 meters long?

2. In parts (a)–(e), use symbols to express the rule as the equation. Use single letters to stand for the variables. Identify what each letter represents.

   a. The perimeter of a rectangle is twice its length plus twice its width.

   b. The area of a triangle is one-half its base multiplied by its height.

   c. Three big marshmallows are needed to make each s'more.

   d. The number of quarters in an amount of money expressed in dollars is four times the number of dollars.

   e. A half-cup of unpopped popcorn is needed to make 6 cups of popped popcorn.

Additional Practice *(continued)*

3. The equation $d = 44t$ represents the distance in miles covered, after traveling
44 miles per hour for t hours.

    a. Make a table that shows the distance traveled, according to this equation,
for every half hour between 0 and 4 hours.

    b. Sketch a graph that shows the
distance traveled between
0 and 4 hours.

    c. If $t = 2.5$, what is d?

    d. If $d = 66$, what is t?

    e. Does it make sense to connect the points on this graph with line segments?
Why or why not?

Additional Practice *(continued)*

4. a. The number of students at Smithville Middle School is 21 multiplied by the number of teachers. Use symbols to express the rule relating the number of students and the number of teachers as an equation. Use single letters for your variables and explain what each letter represents.

   b. If there are 50 teachers at Smithville Middle School, how many students attend the school?

   c. If 1,260 students attend Smithville Middle School, how many teachers teach at the school?

5. a. Refer to the table below. Use symbols to express the rule relating the side length of a square to its area as an equation. Use single letters for your variables, and explain what each letter represents.

Squares

Side Length (cm)	Area (cm^2)
1	1
1.5	2.25
2	4
2.5	6.25
3	9
▪	▪
▪	▪
▪	▪

   b. Use your equation to find the area of a square with a side length of 6 centimeters.

   c. Use your equation to find the side length of a square with an area of 1.44 square centimeters.