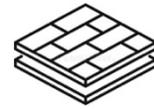


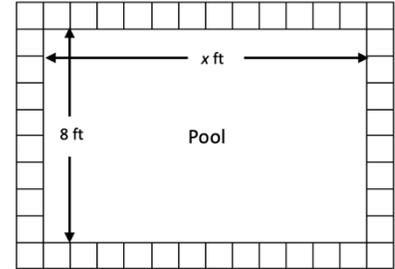


## How Much Does It Cost to Tile a Pool?



The Garcia family is building a rectangular pool and wants to lay 1 ft x 1 ft tiles around the perimeter of the pool. They want the pool to be 8 feet wide, but they haven't decided yet how long it should be. They would like the pool to be at least 16 feet long, but given the size of their backyard, the maximum length is 22 feet.

- How many tiles are needed if the length of the pool is 16 feet? Use colors to demonstrate your strategy for counting the tiles.



- Use your strategy to determine how many tiles are needed if the length of the pool is  $x$  feet.
  - What is the minimum number of tiles that would be needed? What is the maximum? How do you know?
- Home Depot sells 1 ft by 1 ft tiles for \$5.75 per tile and charges a delivery fee of \$9.99. Write a rule for the total cost of having  $n$  tiles delivered.
- Fill in the table to help the Garcia family compare the cost of various size pools. Ignore sales tax. Show your work.

Side length	Number of Tiles	Cost
16 feet		
18 feet		
22 feet		

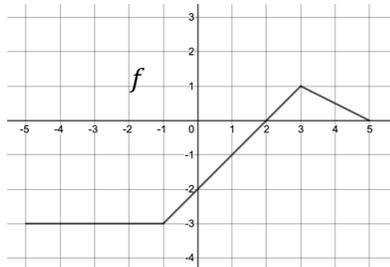
- Can you find a general rule for the cost of tiling a pool that's 8 feet wide by  $x$  feet long?

# Lesson 5.1 – Composition of Functions

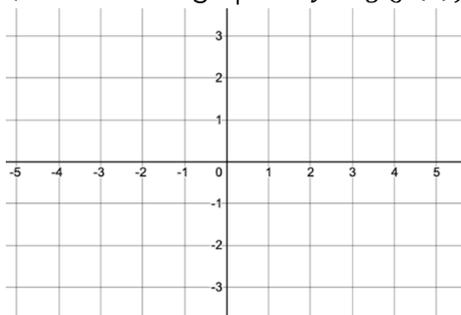
QuickNotes

## Check Your Understanding

1. The function  $H(d)$  represents the amount of homework problems assigned,  $d$  days into the school year. The function  $T(p)$  represents the amount of time it takes, in minutes, to complete  $p$  problems. Interpret the meaning of the statement  $T(H(40)) = 128$  in context.
2. If  $f(x) = \frac{1}{x}$  and  $g(x) = 3x^2 - 5x$ , find  $f(g(x))$  and state its domain.
3. If  $f(g(x)) = \sqrt{2x - 5}$  give a possible equation for  $f$  and a possible equation for  $g$ .
4. The graph of a function  $f$  defined for  $-5 \leq x \leq 5$  is shown below. The function  $g$  is given by  $g(x) = |x|$ .



a) Sketch the graph of  $y = g(f(x))$ .



b) Sketch the graph of  $y = f(g(x))$ .

