Lesson 5 Practice Problems

1. The cell phone plan from Company C costs \$10 per month, plus \$15 per gigabyte for data used. The plan from Company D costs \$80 per month, with unlimited data.

   Rule C gives the monthly cost, in dollars, of using g gigabytes of data on Company C's plan. Rule D gives the monthly cost, in dollars, of using g gigabytes of data on Company D's plan.

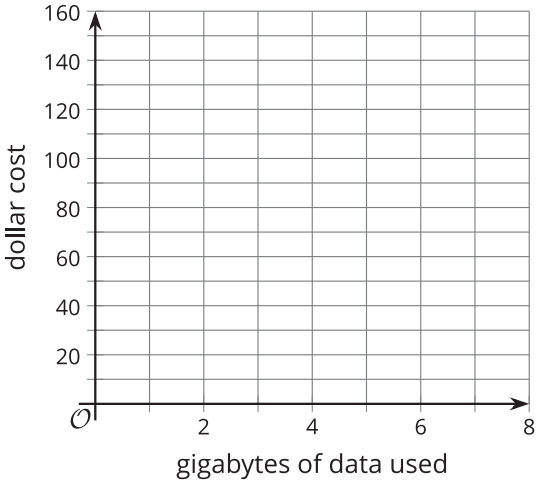
   a. Write a sentence describing the meaning of the statement $C(2) = 40$.

   b. Which is less, $C(4)$ or $D(4)$? What does this mean for the two phone plans?

   c. Which is less, $C(5)$ or $D(5)$? Explain how you know.

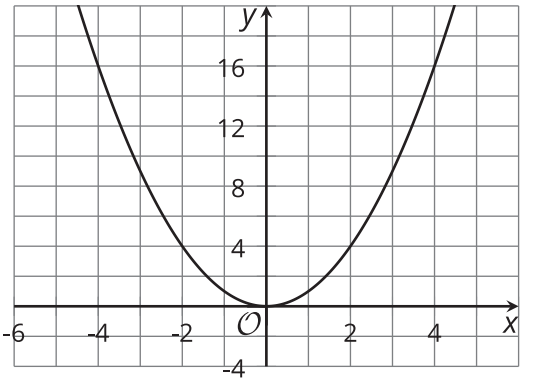
   d. For what number g is $C(g) = 130$?

   e. Draw the graph of each function.



2. Function g is represented by the graph.

   For what input value or values is $g(x) = 4$?



   A. 2

   B. -2 and 2

   C. 16

   D. none

3. Function P gives the perimeter of an equilateral triangle of side length s. It is represented by the equation $P(s) = 3s$.

   a. What does $P(s) = 60$ mean in this situation?

   b. Find a value of s to make the equation $P(s) = 60$ true.

4. Function G takes a student's first name for its input and gives the number of letters in the first name for its output.

   a. Describe the meaning of $G(\text{Jada}) = 4$.

   b. Find the value of $G(\text{Diego})$.

   (From Unit 4, Lesson 2.)

5. W gives the weight of a puppy, in pounds, as a function of its age, t, in months.

   Describe the meaning of each statement in function notation.

   a. $W(2) = 5$

b. $W(6) > W(4)$

c. $W(12) = W(15)$

(From Unit 4, Lesson 3.)

6. Diego is building a fence for a rectangular garden. It needs to be at least 10 feet wide and at least 8 feet long. The fencing he uses costs $3 per foot. His budget is $120.

   He wrote some inequalities to represent the constraints in this situation:

   $f = 2x + 2y$ $\quad$ $x \geq 10$ $\quad$ $y \geq 8$ $\quad$ $3f \leq 120$

   a. Explain what each equation or inequality represents.

   b. His mom says he should also include the inequality $f > 0$. Do you agree? Explain your reasoning.

(From Unit 2, Lesson 18.)