Representing Functions

Let's represent functions.

8.1 The Secret Club

In a secret club, everyone is known by the month they were born. So, Diego would be called "January," and Tyler would be called "August."

1. What would be the name of some people in your class in the secret club?

2. Why might club meetings get kind of confusing?

3. Can you think of a better system for assigning club members new names?

8.2 Examples of Functions

1. For each question, answer yes or no.
   a. It is 50 miles to Tucson. Can we figure out how many kilometers it is to Tucson?

   b. It is 200 kilometers to Saskatoon. Can we figure out how many miles it is to Saskatoon?

   c. A number is -3. Can we figure out its absolute value?

   d. The absolute value of a number is 8. Can we figure out the number?

   e. A circle has a diameter of 8 cm. Can we figure out its circumference?

   f. A circle has a circumference of 10π cm. Can we figure out its diameter?

   g. A square has a side length of 6 units. Can we figure out its perimeter?

   h. A rectangle has a perimeter of 30 meters. Can we figure out its width?

2. Which of the relationships are functions?

3. For each function definition in the table, match it with one of the situations from the first problem, write a statement explaining which variable depends on which, and write an example using function notation. An example is done for you.

function definition	situation	statement	example
$m(x) = 0.62x$	b	Distance in miles depends on distance in kilometers, or, distance in miles is a function of distance in kilometers.	$m(200) = 124$
$f(x) = x \cdot \pi$			
$g(x) = 1.6x$			
$h(x) = 4x$			
$k(x) = \lvert x \rvert$			

8.3 Card Sort: Matching Representations

Your teacher will give you a set of representations. Sort them so that, in each group, there is a table, graph, equation, and example that all represent the same function.

1. For each match that you find, explain to your partner how you know it's a match.
2. For each match that your partner finds, listen carefully to their explanation. If you disagree, discuss your thinking and work to reach an agreement.