Unit 6 Lesson 2: Introduction to Functions

1 Square Me (Warm up)

Student Task Statement

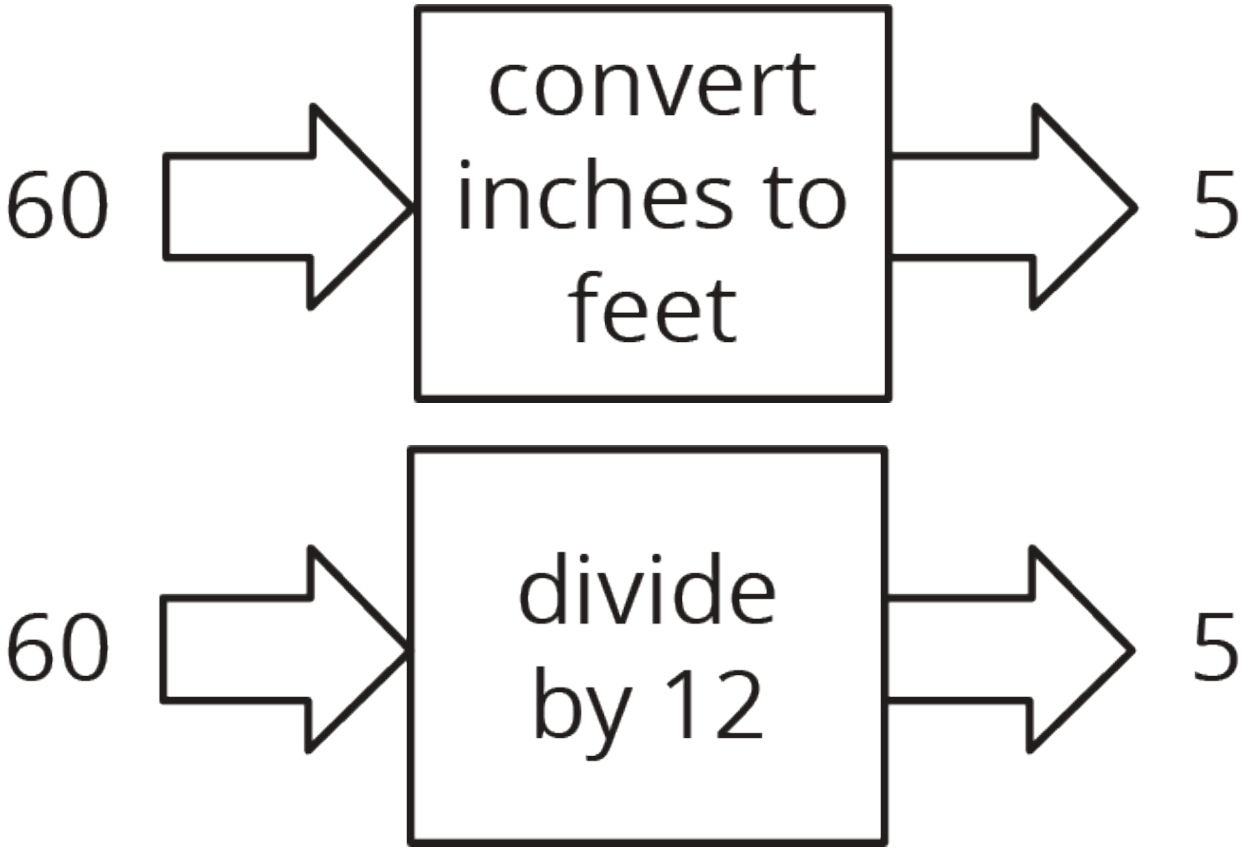
Here are some numbers in a list:

$$1, -3, -\frac{1}{2}, 3, 2, \frac{1}{4}, 0.5$$

1. How many different numbers are in the list?
2. Make a new list containing the squares of all these numbers.
3. How many different numbers are in the new list?
4. Explain why the two lists do not have the same number of different numbers.

2 You Know This, Do You Know That?

Images for Launch



Student Task Statement

Say yes or no for each question. If yes, draw an input-output diagram. If no, give examples of two different outputs that are possible for the same input.

1. A person is 5.5 feet tall. Do you know their height in inches?

2. A number is 5. Do you know its square?

3. The square of a number is 16. Do you know the number?

4. A square has a perimeter of 12 cm. Do you know its area?

5. A rectangle has an area of 16 cm^2. Do you know its length?

6. You are given a number. Do you know the number that is $\frac{1}{5}$ as big?

7. You are given a number. Do you know its reciprocal?

3 Using Function Language

Student Task Statement

Here are the questions from the previous activity. For the ones you said yes to, write a statement like, “The height a rubber ball bounces to depends on the height it was dropped from” or “Bounce height is a **function** of drop height.” For all of the ones you said no to, write a statement like, “The day of the week does not determine the temperature that day” or “The temperature that day is not a function of the day of the week.”

1. A person is 5.5 feet tall. Do you know their height in inches?
2. A number is 5. Do you know its square?
3. The square of a number is 16. Do you know the number?
4. A square has a perimeter of 12 cm. Do you know its area?
5. A rectangle has an area of 16 cm^2. Do you know its length?
6. You are given a number. Do you know the number that is $\frac{1}{5}$ as big?
7. You are given a number. Do you know its reciprocal?

4 Same Function, Different Rule? (Optional)

Student Task Statement

Which input-output rules could describe the same function (if any)? Be prepared to explain your reasoning.