# **Unit 6 Lesson 3: Equations for Functions**

## 1 A Square's Area (Warm up)

#### **Student Task Statement**

Fill in the table of input-output pairs for the given rule. Write an algebraic expression for the rule in the box in the diagram.



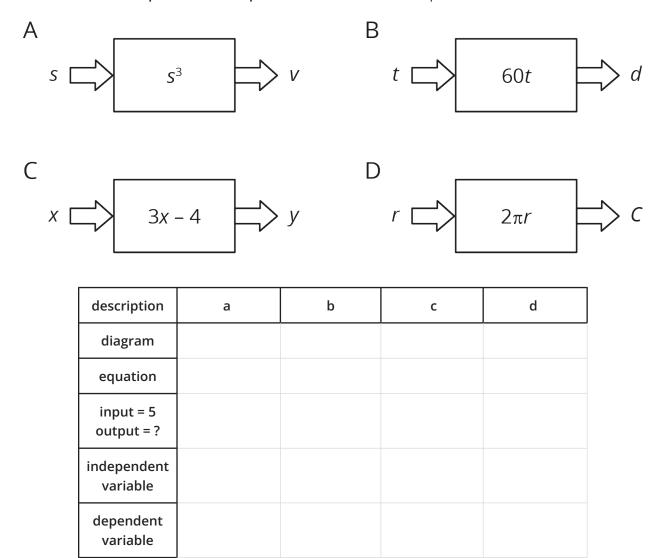
input	output
8	
2.2	
$12\frac{1}{4}$	
S	

### 2 Diagrams, Equations, and Descriptions

#### **Student Task Statement**

Record your answers to these questions in the table provided.

- 1. Match each of these descriptions with a diagram:
  - a. the circumference, C, of a circle with radius, r
  - b. the distance in miles, d, that you would travel in t hours if you drive at 60 miles per hour
  - c. the output when you triple the input and subtract 4
  - d. the volume of a cube, v given its edge length, s
- 2. Write an equation for each description that expresses the output as a function of the input.
- 3. Find the output when the input is 5 for each equation.
- 4. Name the **independent** and **dependent variables** of each equation.



### **3 Dimes and Quarters**

#### **Student Task Statement**

Jada had some dimes and quarters that had a total value of \$12.50. The relationship between the number of dimes, d, and the number of quarters, q, can be expressed by the equation 0.1d + 0.25q = 12.5.

- 1. If Jada has 4 quarters, how many dimes does she have?
- 2. If Jada has 10 quarters, how many dimes does she have?
- 3. Is the number of dimes a function of the number of quarters? If yes, write a rule (that starts with d = ...) that you can use to determine the output, d, from a given input, q. If no, explain why not.
- 4. If Jada has 25 dimes, how many quarters does she have?
- 5. If Jada has 30 dimes, how many quarters does she have?
- 6. Is the number of quarters a function of the number of dimes? If yes, write a rule (that starts with q = ...) that you can use to determine the output, q, from a given input, d. If no, explain why not.

## **Activity Synthesis**

