

Unit 5 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	

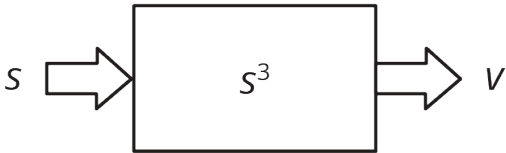
2 Diagrams, Equations, and Descriptions

Student Task Statement

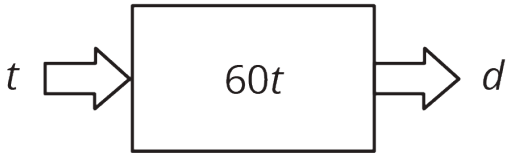
Record your answers to these questions in the table provided.

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

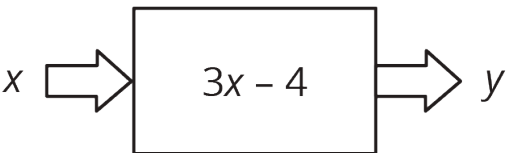
A



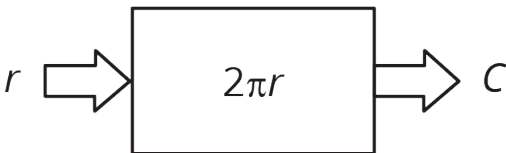
B



C



D



description	a	b	c	d
diagram				
equation				
input = 5 output = ?				
independent variable				
dependent variable				

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 $d = \dots$) 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 $q = \dots$) that you can use to determine the output, q , from a given input, d . If no, explain why not.

Activity Synthesis

