

Unit 6: Functions and Volume

CONCEPT

Name: _____ Date: _____

Solve each problem and write your answer on the line. Use π where asked (leave answers in terms of π unless told otherwise). Show your work on scratch paper.

1. A function rule is $y = x + 5$. Find the output y when the input $x = 3$.

Answer: _____

2. A function rule is $y = 2x$. Find the output y when the input $x = 6$.

Answer: _____

3. A function rule is $y = 4x - 1$. Find the output y when the input $x = 2$.

Answer: _____

4. A function machine follows the rule $y = x/2$. The output is 9. Find the input x .

Answer: _____

5. Find the volume of a rectangular prism with length 5 cm, width 3 cm, and height 4 cm. $V = \text{length} \times \text{width} \times \text{height}$. Give the answer in cubic centimeters.

Answer: _____

6. A cube has each edge equal to 2 cm. Find its volume in cubic centimeters. $V = \text{edge}^3$.

Answer: _____

7. A prism has a base area of 10 square cm and a height of 6 cm. Find its volume using $V = \text{base area} \times \text{height}$. Give the answer in cubic centimeters.

Answer: _____

8. Find the volume of a cylinder with base radius 2 cm and height 5 cm. Use $V = \pi \times r^2 \times h$ and leave your answer in terms of π . Give the answer in cubic centimeters.

Answer: _____

9. Find the volume of a cylinder with base radius 3 cm and height 4 cm. Use $V = \pi \times r^2 \times h$ and leave your answer in terms of π . Give the answer in cubic centimeters.

Answer: _____

10. A cone has base radius 3 cm and height 5 cm. Find its volume using $V = (1/3) \times \pi \times r^2 \times h$. Leave your answer in terms of π . Give the answer in cubic centimeters.

Answer: _____

11. Find the volume of a sphere with radius 3 cm. Use $V = \frac{4}{3} \times \pi \times r^3$ and leave your answer in terms of π . Give the answer in cubic centimeters.

Answer: _____

12. Find the surface area of a cube with each edge 2 cm. A cube has 6 square faces, so $SA = 6 \times \text{edge}^2$. Give the answer in square centimeters.

Answer: _____