7th Grade Volume Assignment Questions

Volume is a measure of the amount of space occupied by a three-dimensional object. It is typically expressed in cubic units, such as cubic centimeters (cm³) or cubic meters (m³). Understanding volume is crucial in various fields, including engineering, architecture, and everyday life applications like cooking or storage planning.

Fill in the Blank: Fill in the blank with the correct words.

1. The volume of a rectangular prism is calculated by multiplying its _____, _____, and _____.

2. The formula for the volume of a cylinder is _____ × _____ × _____.

3. The unit of volume is always expressed in _____ units.

4. To find the volume of an irregular object, you can use the _____ method.

5. The volume of a sphere is calculated using the formula _____ × π × _____.

Word bank: length, width, height, radius, cubic, displacement, base area, (4/3), r³

Multiple Choice Questions: Choose the correct answer from the choices for each question.

1. What is the volume of a cube with a side length of 5 cm?
   a) 25 cm³
   b) 75 cm³
   c) 125 cm³
   d) 625 cm³

2. Which of the following is NOT a unit of volume?
   a) cm³
   b) m³
   c) km²
   d) ft³

3. If you double the dimensions of a rectangular prism, how many times larger will its volume be?
   a) 2 times

b) 4 times

c) 6 times

d) 8 times

4. What is the volume of a cylinder with a radius of 3 cm and a height of 10 cm? (Use $\pi \approx 3.14$)

a) 94.2 cm³

b) 188.4 cm³

c) 282.6 cm³

d) 376.8 cm³

5. Which shape has the largest volume if all have a "radius" or side length of 5 cm?

a) Cube

b) Sphere

c) Cylinder with height equal to diameter

d) Cone with height equal to radius

Open Ended Questions: Answer the following questions in complete sentences:

1. Explain why the volume of a pyramid is one-third the volume of a prism with the same base area and height.

_____

1. Describe a real-life situation where calculating volume would be important and explain why.

_____

1. If you have a container filled with water and you drop in an object that sinks, what happens to the water level and why?

_____