1. A rectangular prism has a surface area of 180 square units. If the length is twice the width and the height is half the width, what are the dimensions of the prism?

2. A cylindrical container has a volume of 500 cubic centimeters. If the height is three times the radius, calculate the radius and height of the cylinder.

3. A cube and a rectangular prism have the same volume. If the cube has a side length of 6 units, what are the dimensions of the rectangular prism?

4. A spherical water tank has a volume of 1000 cubic meters. Calculate the surface area of the tank to the nearest square meter.

5. A triangular pyramid has a base with sides of 8, 10, and 12 units. The height of the pyramid is 7 units. Calculate the surface area of the pyramid.

6. A cone and a cylinder have the same height and base radius. If the volume of the cone is half the volume of the cylinder, find the ratio of their heights.

7. A square pyramid has a lateral surface area of 80 square units. If the slant height is 10 units, calculate the base perimeter of the pyramid.

8. An open rectangular box is made by removing congruent squares from the corners of a 12 cm by 8 cm rectangular sheet. If the squares' side length is 2 cm, calculate the total surface area of the box.

9. A conical tent has a base radius of 6 meters and a slant height of 10 meters. If the tent's curved surface area is 120 square meters, what is its volume?

10. A cube is inscribed inside a sphere in such a way that all the cube's vertices lie on the sphere's surface. Calculate the ratio of the cube's volume to the sphere's volume.