3D Solids & Volumes

Find the volume of each figure. Round your answers to the nearest hundredth, if necessary.

1)

3 cm   5 cm   4 cm   5 cm

2)

20 m   10 m

3)

1 yd

4)

8 m   9 m   7 m   7 m   9 m

5)

5 km   6 km   6 km

6)

10 yd   2 yd
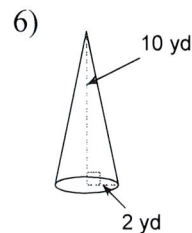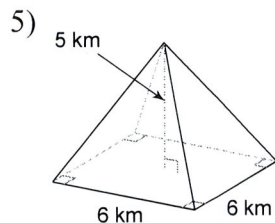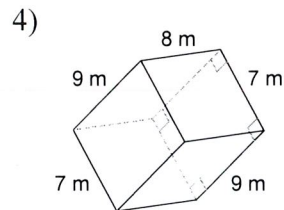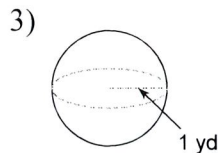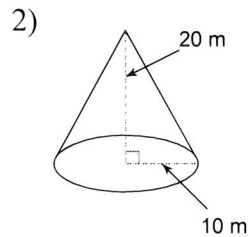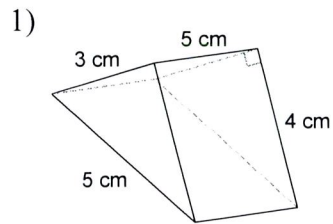
7) A right triangle with a height of 6 cm and a base of 8 cm is rotated 360° around an axis such that the height aligns with the axis of rotation. What 3D solid is produced, and what is the volume of this solid? If a cross section is made by cutting the shape parallel to the base, what shape will that cross section be? If a cross section is made perpendicular through the base along with widest part, what shape is produced?

8) A semicircle with a diameter of 18 in is rotated 360° around an axis. What 3D shape is created, and what is the volume of this shape? If a cross section is cut along the length of the diameter of the figure, wht shape would be produced?

9) A rectangle with length of 7 mm and width of 12 mm is rotated 360° around an axis, with the width aligned to the axis. What 3D solid is made by this rotation, and what is the volume of the solid? What shape is the cross section formed by slicing the figure parallel to the base? What cross section shape is produced when the figure is sliced perpendicular to the base?

10) A conical grain pile has a height of 4 ft. If the pile contains $904.78 \ ft^3$ of grain, what is the diameter of the pile?

   A) 6 ft   B) 10 ft   C) 12 ft   D) 16 ft

11) The volume of a rectanglular prism is represented by the expression $V = \left(3x^2 + x - 10\right)(2x + 1)$. What is the area of the base?

   A) $2x^2 + 5x + 2$ B) $6x^3 + 5x^2 - 19x - 10$ C) $6x^2 - 7x - 5$ D) $3x^2 + x - 10$

2x+1