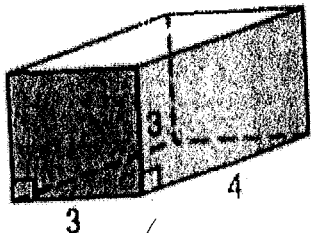


Name: _____
 Date: _____
 Class: _____

Geometry
 Unit 9
 HW 9-1

1) Find the surface area and volume for the following rectangular prism:



$$V = Bh = (3 \cdot 4) \cdot 3 = 36 \cdot 3 = 108$$

$$SA = 2 \cdot (3 \cdot 4) + 2 \cdot (3 \cdot 3) + 2 \cdot (3 \cdot 4)$$

$$SA = 66$$

2) A cube has a base with an area of 196 ft^2 . Find the volume of this cube.

$$a = s^2$$

$$\sqrt{196} = \sqrt{s^2}$$

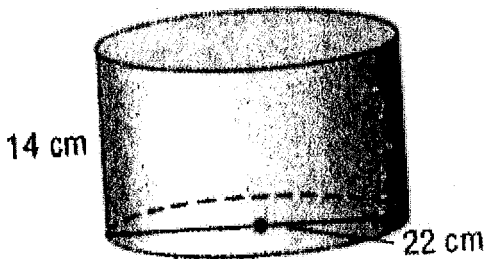
$$14 = s$$

$$V = Bh$$

$$= (14 \cdot 14)(14)$$

$$V = 2744$$

3) Find the surface area and volume in terms of π for the following cylinder:



$$V = Bh$$

$$V = \pi(11)^2(14)$$

$$V = 1694\pi \text{ cm}^3$$

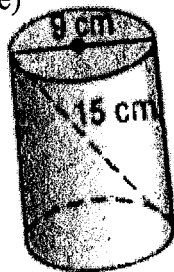
$$SA = 2\pi r^2 + 2\pi rh$$

$$= 2\pi(11)^2 + 2\pi(11)(14)$$

$$SA = 4\pi \text{ cm}^2$$

$$SA = 550\pi \text{ cm}^2$$

4) Find the surface area and volume to the nearest tenth for the following cylinder:
 (15 is the diagonal distance)



$$9^2 + x^2 = 15^2$$

$$x = 12 \rightarrow h$$

$$V = \pi(4.5)^2(12)$$

$$V = 263.4 \text{ cm}^3$$

$$SA = 2\pi r^2 + 2\pi rh$$

$$= 2\pi(4.5)^2 + 2\pi(4.5)(12)$$

$$SA = 462.9 \text{ cm}^2$$

$$SA = 466.5 \text{ cm}^2$$

$$980\pi = \pi r^2 (15) \rightarrow r^2 = 65.33...$$

$$980 = 15r^2 \rightarrow r = 8.08 \cdot 2 = 16.165...$$

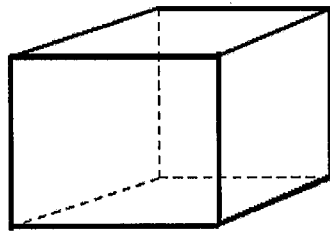
$$\boxed{= 16.2 \text{ in}}$$

5) If the volume of a right circular cylinder is $980\pi \text{ in}^3$ and it is 1.25 feet tall what is its diameter?

$$\boxed{15 \text{ in}}$$

6) The Parkside Packing Company needs a rectangular shipping box. The box must have a length of 11 inches and a width of 8 inches. Find, to the nearest tenth of an inch, the minimum height of the box such that the volume is at least 800 cubic inches.

7) If the following cube has a volume of 64 cm^3 find its surface area:



$$V = Bh = l \cdot w \cdot h \text{ (all the same)}$$

$$\sqrt[3]{64} = \sqrt[3]{5^3}$$

$$s = 4$$

$$SA = \cancel{88} = \frac{16 \text{ one face}}{\times 6}$$

8) A right circular cylinder has an altitude of 11 feet and a radius of 5 feet. What is the lateral area, in square feet, of the cylinder, to the nearest tenth?

$$\boxed{SA = \cancel{304} \text{ cm}^2}$$

$$96 \text{ cm}^2$$

$$6) V \leq Bh$$

$$800 \leq 11 \cdot 8 \cdot h$$

$$\frac{800}{88} \leq \frac{88h}{88}$$

$$9.09... \leq h$$

h must be at least 9.1

8) LA \rightarrow no bases

$$LA = 2\pi rh$$

$$= 2\pi(5)(11)$$

$$\boxed{LA = 345.6 \text{ ft}^2}$$