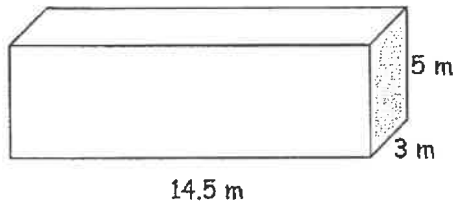


Name: _____

WS3.2Extra - work on sheet Volume of Prisms and Cylinders Worksheet

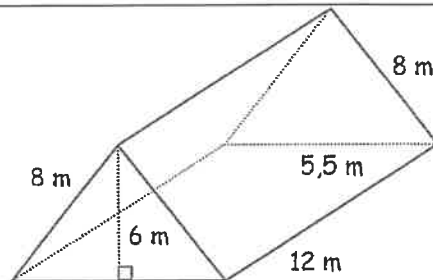
1.)



Area of Base:

Volume:

2.)



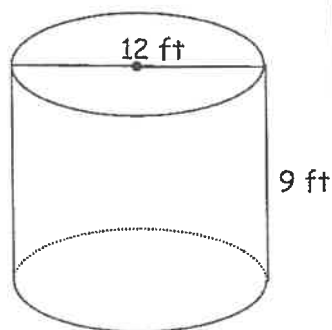
Area of Base:

Volume:

3.)

Area of Base:

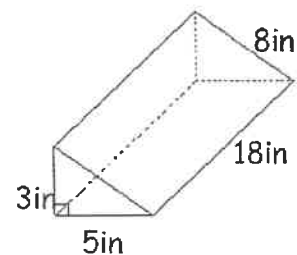
Volume:



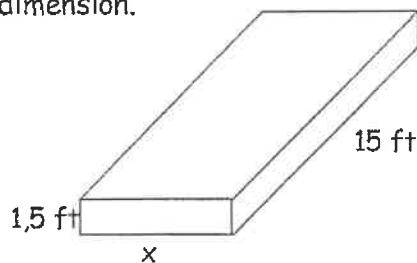
4.)

Area of Base:

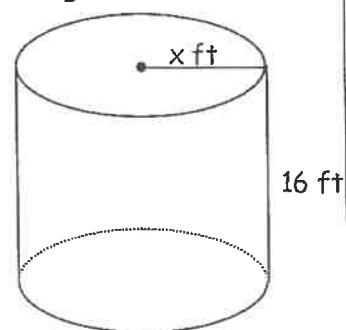
Volume:



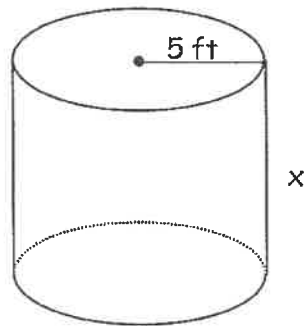
5.) If the volume of the figure below is 135ft^3 , find the missing dimension.



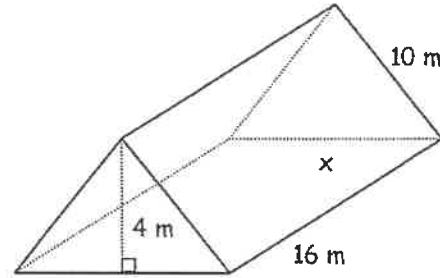
6.) If the volume of the figure below is $4,069.44\text{ft}^3$, find the missing dimension.



7.) If the volume of the figure below is 902.75ft^3 , find the missing dimension.



8.) If the volume of the figure below is 224m^3 , find the missing dimension.



9.) Cameron makes a glass cylinder that has a diameter of 6 in. and a height of 5 in. for a friend. He wants to send it to his friend in a box that is $6 \times 6 \times 5$. He wants to put the cylinder in a box and wrap it with packing foam. How much packing foam does Cameron need?

10.) The radius of a cylinder is 3 m and the height is 4 m.

a.) What is the volume of the cylinder?

b.) If you double the radius, what is the new volume?

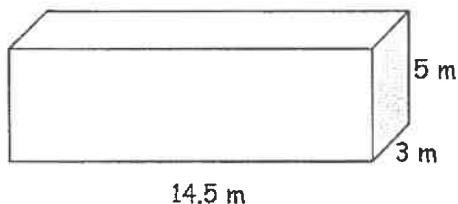
c.) How do these two volumes compare? Why do you think this happens?

W53-2E+cc KEY

Name: _____ Units: _____ Date: 3/5/12

Volume of Prisms and Cylinders Worksheet

1.)



Area of Base:

$$A = l \cdot w$$

$$= 14.5(3)$$

$$= 43.5 \text{ m}^2$$

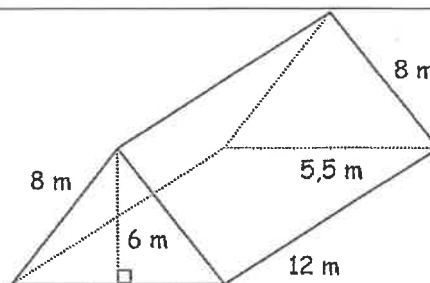
Volume:

$$V = \text{base area} \times H$$

$$= 43.5 \times 5$$

$$= 217.5 \text{ m}^3$$

2.)



Area of Base:

$$A = bh/2$$

$$= \frac{12(6)}{2}$$

$$= 36 \text{ m}^2$$

Volume:

$$V = AH$$

$$= 36(5.5)$$

$$= 198 \text{ m}^3$$

3.) $r = \frac{12}{2} = 6$

Area of Base:

$$A = \pi r^2$$

$$= 3.14(6)^2$$

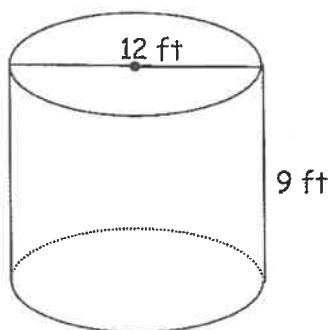
$$= 113.04 \text{ ft}^2$$

Volume:

$$V = AH$$

$$= 113.04(9)$$

$$= 1017.36 \text{ ft}^3$$



4.)

Area of Base:

$$A = bh/2$$

$$= \frac{5(3)}{2}$$

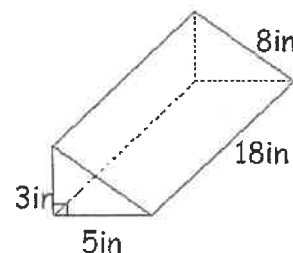
$$= 7.5 \text{ in}^2$$

Volume:

$$V = AH$$

$$= 7.5(18)$$

$$= 135 \text{ in}^3$$



5.) If the volume of the figure below is 135 ft^3 , find the missing dimension.

$$135 = A(15)$$

$$\frac{135}{15} = A$$

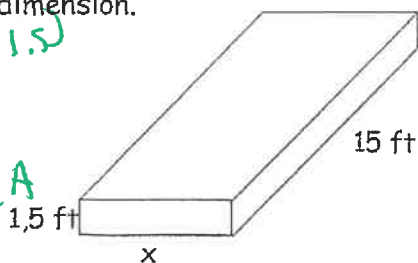
$$90 \text{ ft}^2 = A$$

$$A = lw$$

$$90 = 15x$$

$$\frac{90}{15} = x$$

$$x = 6 \text{ ft}$$



6.) If the volume of the figure below is $4,069.44 \text{ ft}^3$, find the missing dimension.

$$\frac{4069.44}{16} = A$$

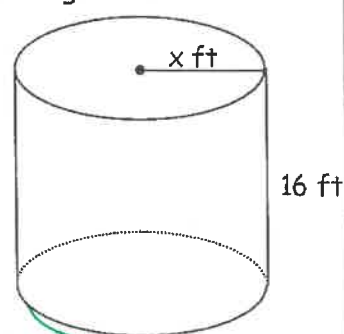
$$254.34 = 3.14x^2$$

$$\frac{254.34}{3.14} = x^2$$

$$81 = x^2$$

$$\sqrt{81} = x$$

$$x = 9 \text{ ft}$$



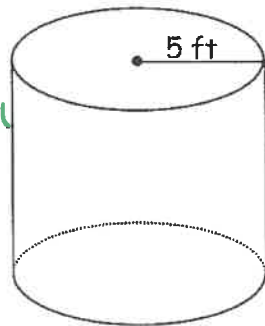
7.) If the volume of the figure below is 902.75ft^3 , find the missing dimension.

$$A = 3.14 (5)^2$$

$$= 78.5\text{ft}^2$$

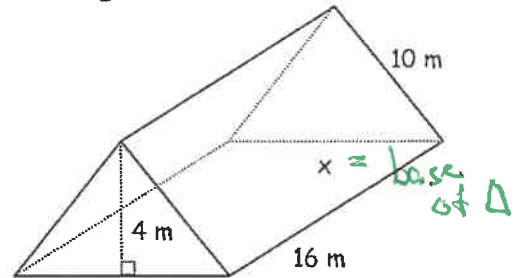
$$902.75 = 78.5 \cdot h$$

$$h = 11.5$$



$x = h$

8.) If the volume of the figure below is 224m^3 , find the missing dimension.



$$224 = A \cdot l$$

$$\frac{224}{16} = A$$

$$14 = \frac{x \cdot 16}{2}$$

$$14 = 8x$$

$$x = 7\text{ m}$$

9.) Cameron makes a glass cylinder that has a diameter of 6 in. and a height of 5 in. for a friend. He wants to send it to his friend in a box that is $6 \times 6 \times 5$. He wants to put the cylinder in a box and wrap it with packing foam. How much packing foam does Cameron need?



$$A = 3.14 (3)^2$$

$$= 28.26$$

$$V = 28.26 (5) = 141.3\text{ in}^3$$



$$A = 6 (6)$$

$$= 36\text{ in}^2$$

$$V = 36 (5) = 180\text{ in}^3$$

$$180$$

$$- 141.3$$

$$38.7\text{ in}^3$$

of foam

10.) The radius of a cylinder is 3 m and the height is 4 m.

a.) What is the volume of the cylinder?

$$A = 3.14 (3)^2$$

$$= 28.26\text{ m}^2$$

$$V = 28.26 (4)$$

$$= 113.04\text{ m}^3$$

b.) If you double the radius, what is the new volume?

$$r = 3 (2)$$

$$= 6\text{ m}$$

$$A = 3.14 (6)^2$$

$$= 113.04\text{ m}^2$$

$$V = 113.04 (4)$$

$$= 452.16\text{ m}^3$$

c.) How do these two volumes compare? Why do you think this happens?

The larger (b) is four times the smaller (a).
The base area of the larger (b) is numerically equal to the volume of the smaller (a).