

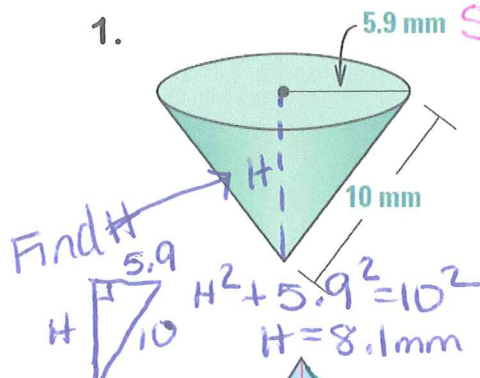
Name: Key Hour: \_\_\_\_\_

## Basic Surface Area and Volume of CONES

### Homework

Find the volume and surface area of the solid. Round to the nearest tenth.

1.



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

$$SA = \pi (5.9)^2 + \pi (5.9) 10$$

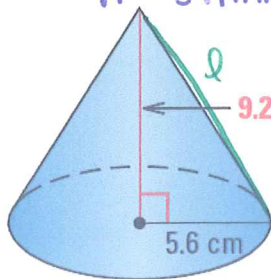
$$SA = 799.5 \text{ mm}^2$$

$$V = \frac{1}{3} B \cdot H$$

$$V = \frac{1}{3} (\pi (5.9)^2) 8.1$$

$$V = 295.3 \text{ mm}^3$$

2.



$$SA = \pi (5.6)^2 + \pi (5.6) (10.8)$$

$$SA = 288.5 \text{ cm}^2$$

$$V = \frac{1}{3} (\pi r^2) H$$

$$V = \frac{1}{3} \pi (5.6)^2 \cdot 9.2$$

$$V = 302.2 \text{ cm}^3$$

3.

Find  $H$



$$H^2 + 7.8^2 = 10^2$$

$$H = 6.2 \text{ m}$$

$$SA = \pi (7.8)^2 + \pi (7.8) 10$$

$$SA \approx 436.2 \text{ m}^2$$

$$V = \frac{1}{3} B \cdot H$$

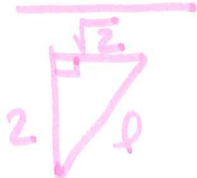
area of Base  $\pi r^2$

$$V = \frac{1}{3} \pi (7.8)^2 \times 6.2$$

$$V = 394.9 \text{ m}^3$$

4.

Find  $l$



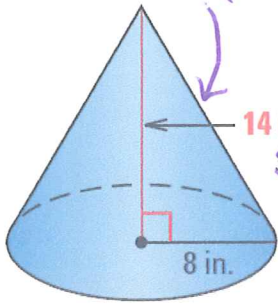
$$SA = \pi (\sqrt{2})^2 + \pi \sqrt{2} \cdot 2.4$$

$$SA = 17.0 \text{ ft}^2$$

$$V = \frac{1}{3} \pi (\sqrt{2})^2 \times 2$$

$$V \approx 4.1 \text{ ft}^3$$

5.



Find  $l$   
 $14^2 + 8^2 = l^2$   
 $l = 16.1 \text{ in}$

SA = 605.7 in<sup>2</sup>

SA =  $\pi 8^2 + \pi 8 \times 16.1$   
 SA = 605.7 in<sup>2</sup>

V = 938.3 in<sup>3</sup>

$V = \frac{1}{3} B \cdot H$

$V = \frac{1}{3} \pi r^2 \cdot H$

$V = \frac{1}{3} \pi 8^2 \times 14$       $V = 938.3 \text{ in}^3$

add SA

6. Find the volume of the composite solid.

SA = cone w/o circle + cylinder w/ one base

SA =  $\pi r^2 + \pi r l + 2\pi r^2 + 2\pi r h$

SA =  $\pi r l + \pi r^2 + 2\pi r h$

SA =  $\pi 6 \cdot 9.2 + \pi (6)^2 + 2 \cdot \pi \cdot 6 \cdot 15$

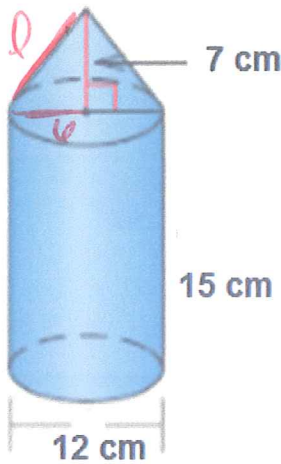
SA  $\approx$  851.999     (SA = 852.0 cm<sup>2</sup>)

$V = \frac{1}{3} B \cdot H + B \cdot H$

$V = \frac{1}{3} \pi 6^2 \times 7 + \pi 6^2 \times 15$

$V \approx 1960.4 \text{ cm}^3$

Find  $l$



$6^2 + 7^2 = l^2$   
 $l = 9.2$

7. Find the surface area of the composite solid.

SA = cone without circle base + cylinder w/ one of the bases

SA =  $\pi r l + \pi r^2 + 2\pi r h$

SA =  $\pi 2 \cdot 7.2 + \pi (2)^2 + 2\pi 2 \cdot 9.4$

SA  $\approx$  175.9 cm<sup>2</sup>

