

KEY

Practice (3.3)

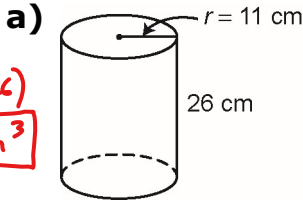
For #1 to #3, show your calculations in your notebook.

1. Determine the volume of each cylinder.

$$V = \pi r^2 h$$

$$= (3.14)(11)^2(26)$$

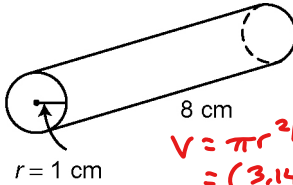
$$V = 9878.4 \text{ cm}^3$$



$$V = \pi r^2 h$$

$$= (3.14)(1)^2(8)$$

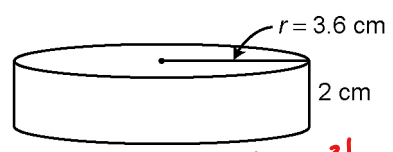
$$V = 25.12 \text{ cm}^3$$



$$V = \pi r^2 h$$

$$= (3.14)(3.6)^2(2)$$

$$V = 81.39 \text{ cm}^3$$

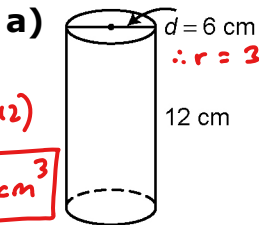


2. What is the volume of each cylinder?

$$V = \pi r^2 h$$

$$= (3.14)(3)^2(12)$$

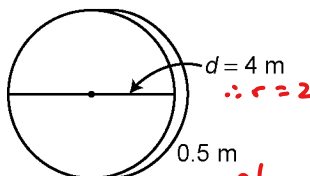
$$V = 339.12 \text{ cm}^3$$



$$V = \pi r^2 h$$

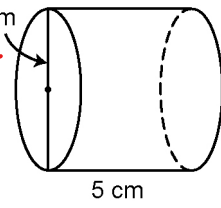
$$= (3.14)(2)^2(0.5)$$

$$V = 6.28 \text{ m}^3$$



$$V = \pi r^2 h$$

$$= (3.14)(2.5)^2(5)$$



3. What is the radius of each cylinder?

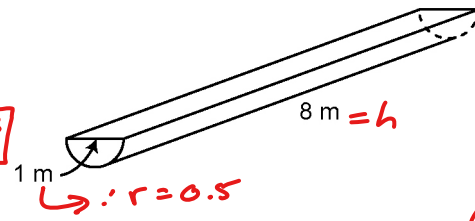
- a) height = 10 cm, volume = 502.4 cm³
- b) height = 8 cm, volume = 1230.88 cm³
- c) height = 5 cm, volume = 2653.3 cm³

4. Determine the volume of this semi-circular trough.

$$V = \frac{1}{2} \pi r^2 h$$

$$= (0.5)(3.14)(0.5)^2(8)$$

$$V = 3.14 \text{ m}^3$$



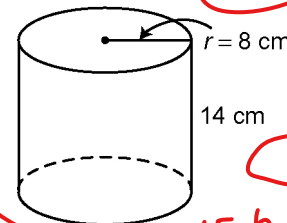
5. Avery thinks that if you want to double the volume of this cylinder, you must double the height of it. Monica believes that to double the volume, you must double the radius. Prove who is right.

#5 VOLUME NOW

$$V = \pi r^2 h$$

$$= (3.14)(8)^2(14)$$

$$V = 2813.44$$



3a) $V = \pi r^2 h$
 $(502.4) = (3.14)r^2(10)$
 $\frac{502.4}{314} = \frac{31.4r^2}{314}$
 $16 = r^2$
 $4 \text{ cm} = r$

3b) $V = \pi r^2 h$
 $(1230.88) = (3.14)r^2(8)$
 $\frac{1230.88}{25.12} = \frac{25.12r^2}{25.12}$
 $49 = r^2$
 $7 \text{ cm} = r$

3c) $V = \pi r^2 h$
 $(2653.3) = (3.14)r^2(5)$
 $\frac{2653.3}{15.7} = \frac{15.7r^2}{15.7}$
 $169 = r^2$
 $13 \text{ cm} = r$

IF h DOUBLES:

$$V = \pi r^2 h$$

$$= (3.14)(8)^2(28)$$

$$V = 5626.88$$

IF r DOUBLES:

$$V = \pi r^2 h$$

$$= (3.14)(16)^2(14)$$

$$V = 11253.76$$

AVERY IS RIGHT!

$\frac{5626.88}{2813.44} = 2$ DOUBLE

$\frac{11253.76}{2813.44} = 4$ QUADRUPLE