

Geometry
Volume of Pyramids & Cones

Name: _____

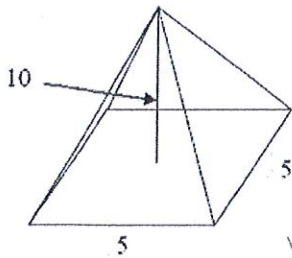
Date: _____

Volume of Pyramids and Cones *both meet at a single vertex

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

- B = area of base
- h = height of pyramid/cone
- units cubed

7. V = _____



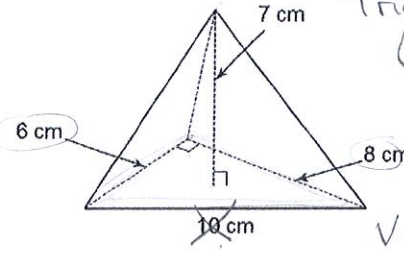
square pyramid
↳ B: use $A = l \cdot w$

$$V = \frac{1}{3} (l \cdot w) h$$

$$V = \frac{1}{3} (5 \cdot 5) 10$$

$$V \approx 83.3 \text{ units}^3$$

8. V = _____



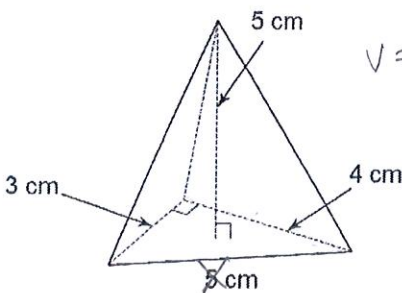
Triangular Pyramid
↳ B: use $= \frac{1}{2} bh$

$$V = \frac{1}{3} (\frac{1}{2} bh) h$$

$$V = \frac{1}{3} (\frac{1}{2} \cdot 6 \cdot 8) 7$$

$$V = 56 \text{ cm}^3$$

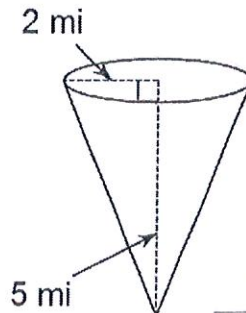
9. V = _____



$$V = \frac{1}{3} (\frac{1}{2} \cdot 3 \cdot 4) 5$$

$$V = 10 \text{ cm}^3$$

10. V = _____



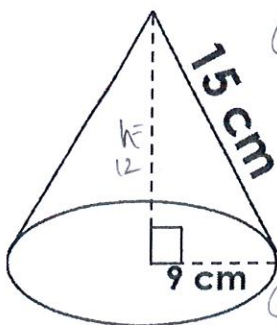
Cone
↳ B: use $A = \pi r^2$

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

$$V = \frac{1}{3} (\pi 2^2) 5$$

$$V = 20.9 \text{ mi}^3$$

11. V = _____



① calculate height

$$h^2 + 9^2 = 15^2$$

$$h^2 + 81 = 225$$

$$h^2 = 144$$

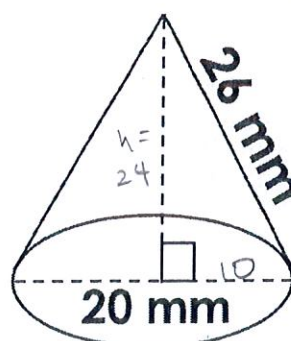
$$h = 12$$

② $V = \frac{1}{3} (\pi r^2) h$

$$V = \frac{1}{3} (\pi 9^2) 12$$

$$V = 1017.9 \text{ cm}^3$$

12. V = _____



$$h^2 + 10^2 = 26^2$$

$$h^2 + 100 = 676$$

$$h^2 = 576$$

$$h = 24$$

$$V = \frac{1}{3} (\pi 10^2) 24$$

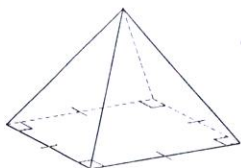
$$V = 2513.3 \text{ mm}^3$$

Classwork - Pyramids & Cones

Name each figure.

$$V = \frac{1}{3} B h$$

1)



square pyramid

2)



cone

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

3)

$V = \frac{1}{3} (\frac{1}{2} b \cdot h) h$
 $V = \frac{1}{3} (\frac{1}{2} \cdot 8 \cdot 6) 6$
 $V = 48 \text{ km}^3$

4)

$V = \frac{1}{3} (\pi r^2) h$
 $V = \frac{1}{3} (\pi 12^2) 24$
 $V \approx 3619.11 \text{ ft}^3$

5)

$V = \frac{1}{3} (l \cdot w) h$
 $V = \frac{1}{3} (9 \cdot 7) 11$
 $V = 231 \text{ mi}^3$

6)

$V = \frac{1}{3} (l \cdot w) h$
 $V = \frac{1}{3} (8 \cdot 8) 10$
 $V \approx 213.33 \text{ in}^3$

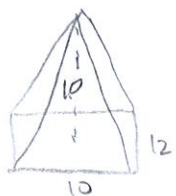
7)

$V = \frac{1}{3} (\pi r^2) h$
 $V = \frac{1}{3} (\pi 9^2) 18$
 $V \approx 1526.81 \text{ yd}^3$

8)

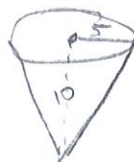
$V = \frac{1}{3} (\frac{1}{2} \cdot b \cdot h) h$
 $V = \frac{1}{3} (\frac{1}{2} \cdot 4 \cdot 3) 7$
 $V = 14 \text{ mi}^3$

9) A rectangular pyramid of height 10 ft measuring 10 ft and 12 ft along the base.



$V = \frac{1}{3} (l \cdot w) h$
 $V = \frac{1}{3} (10 \cdot 12) 10$
 $V = 400 \text{ ft}^3$

10) A cone with radius 5 ft and a height of 10 ft.



$V = \frac{1}{3} (\pi r^2) h$
 $V = \frac{1}{3} (\pi 5^2) 10$
 $V \approx 261.8 \text{ ft}^3$