Name **Key**   Date _____

11.6 Volume of Pyramids & Cones CYU

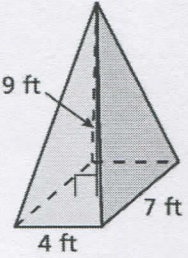| CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Volume of pyramids	1 - 3	4 - 6	
Volume of cones	15, 16		
Similar figures	7, 8	17, 18	
Volume of composite figures		9 - 11	12 - 13
Real World Application			14

Find the volume of the pyramids. Show your set up and work to get full credit. Don't forget appropriate units.

1.

10 m

9 m

16 m

240 m³

2.   **845 in³**

15 in.

13 in.

3.   **84 ft³**

9 ft

7 ft

4 ft

Find the indicated measure. Show your set up and work to get full credit. Think about the appropriate units. Sketch a diagram for each problem.

4. A pyramid with a square base has a volume of 320 cubic centimeters and a height of 15 centimeters. Find the side length of the square base.
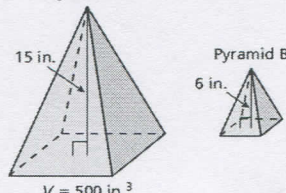
$$l = 8cm$$

5. A pyramid with a rectangular base has a volume of 60 cubic feet and a height of 6 feet. The width of the rectangular base is 4 feet. Find the length of the rectangular base.
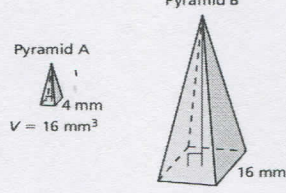
$$l = 7.5 ft$$

6. A pyramid with a triangular base has a volume of 80 cubic meters and a base area of 20 square meters. Find the height of the pyramid.

$$h = 12m$$

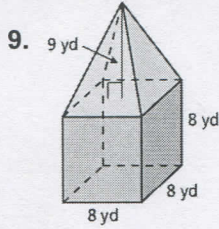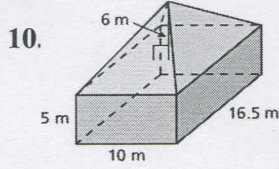**The pyramids are similar. Find the volume of Pyramid B.**

7.   Pyramid A

15 in.

Pyramid B

6 in.

V = 500 in.³

32 in³

8.   Pyramid B

Pyramid A

4 mm

V = 16 mm³

16 mm

1024 mm³

Find the volume of the composite solid.

9. 9 yd, 8 yd, 8 yd, 8 yd

$704 \, yd^3$

10. 6 m, 5 m, 16.5 m, 10 m

$1155 m^3$

11. 10 cm, 10 cm, 12 cm

$960 \, cm^3$

12. 7 in., 4 in., 15 in.

$\approx 871.27 \, in^3$

13. 4 cm, 4 cm, 4 cm
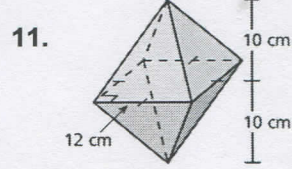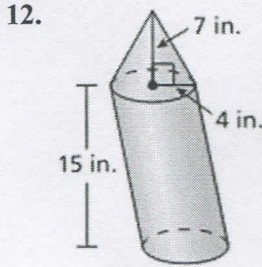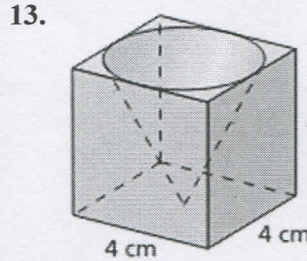
$47.24 \, cm^3$

14. The Pyramid Arena in Memphis, Tennessee is about 98 meters tall and has a square base with a side length of about 180 meters. A prism-shaped building has the same square base as the Pyramid Arena. What is the height of the building if it has the same volume as the Pyramid Arena? (HINT: draw a diagram)

$\frac{98}{3} m \approx 32.667m$

Find the volume of the cone. Show your set up and work to get full credit. Don't forget appropriate units.

15. 8 cm, 5 cm
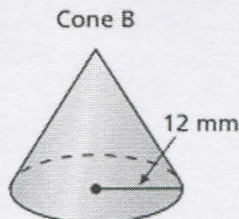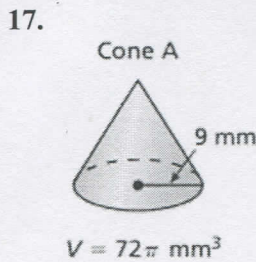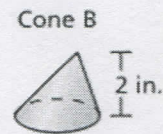
$\approx 209.44 cm^3$

16. 4 in., 2 in.
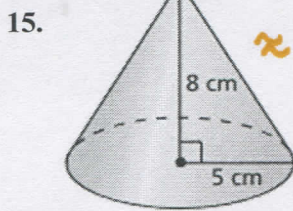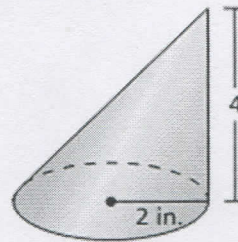
$16.76 \, in^3$

The cones are similar. Find the volume of Cone B.

17.

Cone A — 9 mm — $V = 72\pi \, mm^3$

Cone B — 12 mm

$= \frac{512\pi}{3} mm^3 \approx 536.165 mm^3$

18.

Cone A — 4 in. — $V = 28\pi \, in.^3$

Cone B — 2 in.
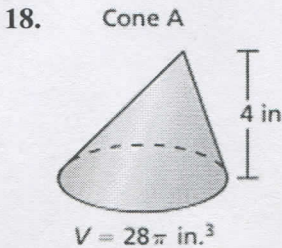
$= \frac{7\pi}{2} in^3 \approx 10.996 in^3$

CYU Reflection: *How far can you go: basic, intermediate, or advanced?*
Rate your mastery level!
How confident are you with the skills this CYU covered? Circle the score you would give yourself.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

Basic — Intermediate — Advanced — Solved ALL!