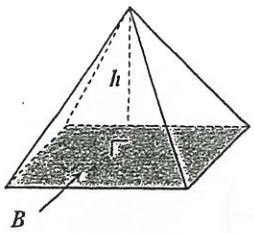
Name: Key	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples

Pyramids



$$V = \frac{1}{3}Bh$$

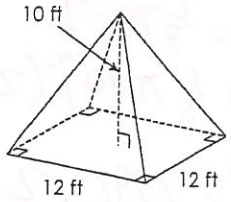
B = area of the base
h = height

Rectangle
$A = lw$

Triangle
$A = \frac{1}{2}bh$

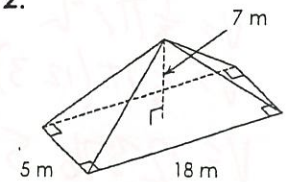
Find the volume of each pyramid.

1.



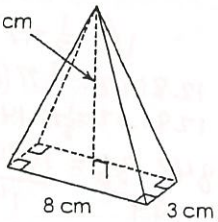
$V = \frac{1}{3}lwh$
$V = \frac{1}{3}(12)(12)(10)$
$V = 4(12)(10)$
$V = 480\ ft^3$

2.



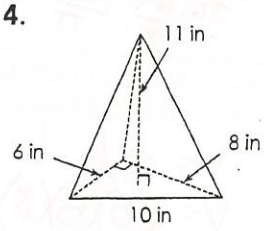
$V = \frac{1}{3}lwh$
$V = \frac{1}{3}(18)(5)(7)$
$V = 6(5)(7)$
$V = 210\ m^3$

3.



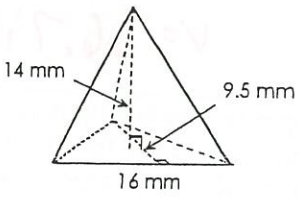
$V = \frac{1}{3}lwh$
$V = \frac{1}{3}(8)(3)(9)$
$V = 8(1)(9)$
$V = 72\ cm^3$

4.



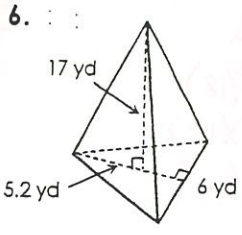
$V = \frac{1}{3} \cdot \frac{1}{2}bhh$
$V = \frac{1}{3} \cdot \frac{1}{2}(6)(8)(11)$
$V = 2(4)(11)$
$V = 88\ in^3$

5.



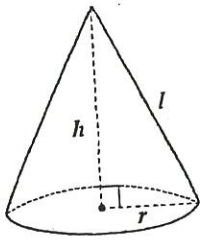
$V = \frac{1}{3} \cdot \frac{1}{2}bhh$
$V = \frac{1}{3} \cdot \frac{1}{2}(16)(9.5)(14)$
$V = \frac{1}{3}(8)(9.5)(14)$
$V = 354.7\ mm^3$

6.



$V = \frac{1}{3}\frac{1}{2}bhh$
$V = \frac{1}{3} \cdot \frac{1}{2}(6)(5.2)(17)$
$V = \frac{1}{3}(3)(5.2)(17)$
$V = 1(5.2)(17)$
$V = 88.4\ yd^3$

Cones

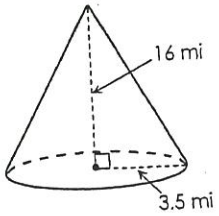


$$V = \frac{1}{3}\pi r^2 h$$

r = radius
h = height

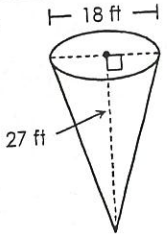
Find the volume of each cone below. Round to the nearest tenth.

7.



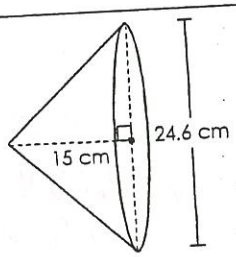
$V = \frac{1}{3}\pi r^2 h$
$V = \frac{1}{3}\pi (3.5)^2 (16)$
$V = 205.3 \text{ mi}^3$

8.



$V = \frac{1}{3}\pi r^2 h$
$V = \frac{1}{3}\pi (9)^2 (27)$
$V = 2290.2 \text{ ft}^3$

9.



$V = \frac{1}{3}\pi r^2 h$
$V = \frac{1}{3}\pi (12.3)^2 (15)$
$V = 2376.5 \text{ cm}^3$

Applications

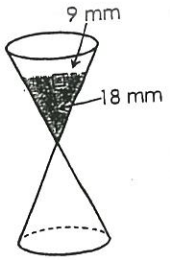
10. Find the height of a cone with a radius of 12 inches and a volume of 1,281.12 cubic inches.

$V = \frac{1}{3}\pi r^2 h$
$1281.12 = \frac{1}{3}\pi (12)^2 h$
$3 \cdot 1281.12 = \frac{1}{3}\pi 144h \cdot 3$
$\frac{3843.36}{144} = \frac{\pi 144h}{144}$
$\frac{26.69}{\pi} = \frac{\pi h}{\pi}$
$h = 8.5 \text{ in}$

11. Alyssa is making a candle in the shape of a square pyramid. If the base edge is 5 inches and the height is 8 inches, how much wax will she need?

$V = \frac{1}{3} lwh$
$V = \frac{1}{3}(5)(5)(8)$
$V = \frac{1}{3}(200)$
$V = 66.7 \text{ in}^3$

12. You are playing a game in which you must answer a question before the sand in the timer falls to the bottom. If the sand is falling at a rate of 50 cubic millimeters per second, how long do you have to answer the question?



$V = \frac{1}{3}\pi r^2 h$
$V = \frac{1}{3}\pi (9)^2 (18)$
$V = \frac{1}{3}\pi (81)(18)$
$V = 1526.8$

$\frac{50 \text{ mm}^3}{1 \text{ sec}}$

30.5 seconds