



Name \_\_\_\_\_ Date \_\_\_\_\_

Practice: For use after Lesson 12.2, Geometry

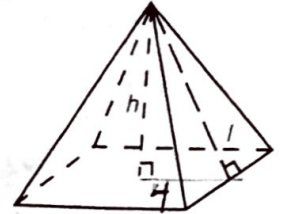
$$L = \frac{1}{2} p l$$

$$T = L + B$$

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

### Pyramids

Use this regular square pyramid in Exercises 1–5.



$s=8$

	h	Units		Square Units			Cubic Units
		l	p	B	L	T	V
1.	3	5	32	64	80	144	64
2.	4	5	24 $s=6$	36	60	96 $60+36$	48
3.	5	13	96 $s=24$	576	624	1200	960
4.	6	10	64 $s=16$	256	320	576	512
5.	5	5√2	40 $s=10$	100	100√2	100√2 + 100	166.67

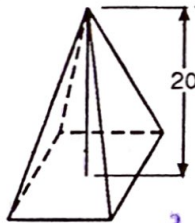
Find the volume of each pyramid.

6. Regular square

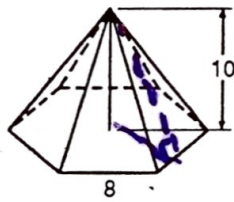
7. Regular hexagonal

8. Oblique triangular ( $h = 9$ )

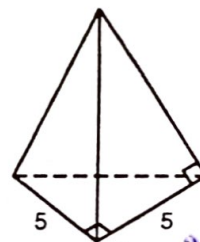
9. Regular triangular  $245\sqrt{3}$



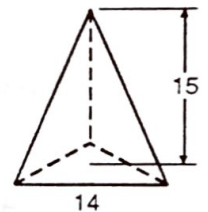
$960 \text{ units}^3$



$554.4 \text{ units}^3$



$37.5 \text{ units}^3$

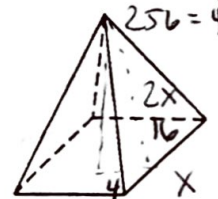


$424.2 \text{ units}^3$

This regular pyramid has a square base and a lateral area of  $256 \text{ in.}^2 = \frac{1}{2} p l \Rightarrow 256 = \frac{1}{2} (4x)(2x)$

10. If the slant height is twice the length of the base edge, find the length of the base. 8 in.

11. Find the height of the pyramid. 15.49 in.



### Application

12. Archaeology How much greater was the surface area of the Great Pyramid of Cheops before the outside coating of stone was removed? Originally, it was 480.75 ft high, and each edge of the square base measured 764 ft. The current dimensions are 460' and 720' respectively.

$97,120.32 \text{ ft}^2$

$S = 764$   
 $P = 3056$   
 $L = 614.04$   
 $B = 583696$   
 $T = 1521949.12$

$P = 2880$   
 $L = 584.12$   
 $B = 518400$   
 $T = 1359532.8$



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Practice: For use after Lesson 12.5, Geometry

$$L = \pi r l$$

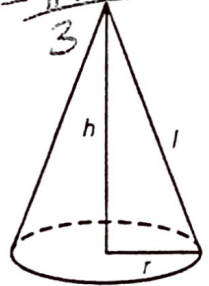
$$T = \pi r l + \pi r^2$$

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

### Cones

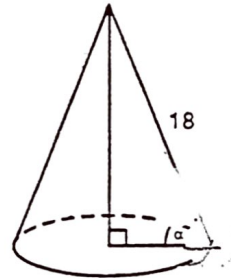
Complete the table for this right circular cone.

	h	Units		Square Units		Cubic Units
		r	l	L	T	V
1.	6	8	10	$80\pi$	$144\pi$	$128\pi$
2.	10	24	26	$624\pi$	$1200\pi$	$1920\pi$
3.	7	4	$\sqrt{65}$	$4\sqrt{65}\pi$	$16\pi$	$\frac{112}{3}\pi$
4.	3	$3\sqrt{3}$	6	$18\sqrt{3}\pi$	$18\sqrt{3}\pi + 27\pi$	$27\pi$

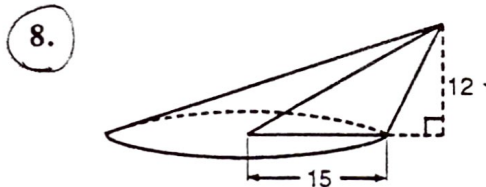


If  $l = 18$ , and  $\alpha$  has the given measure, find the lateral area, total area, and volume of this cone.

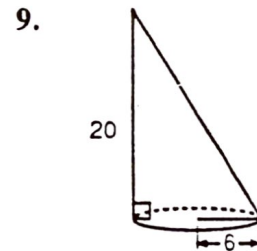
5.  $\alpha = 45$   $229.14\pi$ ,  $391.19\pi$ ,  $687.63\pi$   
 $162\sqrt{2}\pi$ ,  $162\sqrt{2}\pi + 162\pi$ ,  $486\sqrt{2}\pi$
6.  $\alpha = 30$   $280.62\pi$ ,  $523.67\pi$   
 $162\sqrt{3}\pi$ ,  $162\sqrt{3}\pi + 243\pi$ ,  $729\pi$
7.  $\alpha = 60$   $162\pi$ ,  $243\pi$ ,  $243\sqrt{3}\pi$   
 $420.93\pi$



Find the volume of each cone.



$$900\pi$$



$$240\pi$$

### Application

10. Agriculture Find the volume of this corn silo if it is 20 ft high, 8 ft in diameter, and the height of the funnel is 6 ft.  $352\pi \text{ ft}^3$

