

Remember to study all homework as some concepts are not covered on here.

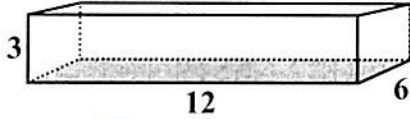
Pre AP Geometry  
Ch 3 & 4 Review

Name Key  
Pd \_\_\_\_\_ Date \_\_\_\_\_

Leave answers in terms of  $\pi$  or rounded to thousandths.

1.

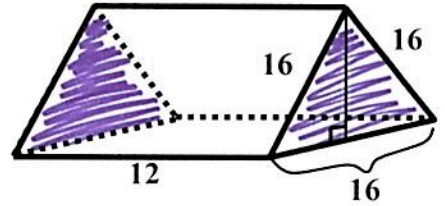
$LA = Ph$   
 $SA = Ph + 2B$   
 $V = B \cdot h$



$B = 72$     $P = 36$   
 $h = 3$

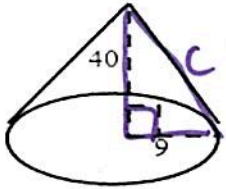
$LA = \underline{108}$   
 $SA = \underline{252}$     $V = \underline{216}$

2.



$LA = \underline{576}$     $B = \frac{16^2 \sqrt{3}}{4}$   
 $SA = \underline{576 + 128\sqrt{3}}$     $V = \underline{768\sqrt{3}}$     $B = \underline{64\sqrt{3}}$   
 (797.703)   (1330.215)    $h = 12$   
 $P = 48$

3.

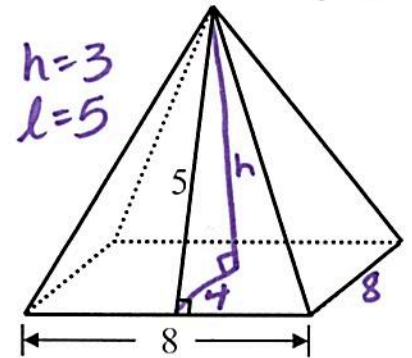


$C = 41$     $h = 40$   
 $l = 41$     $r = 9$   
 $LA = \pi r l$   
 $SA = \pi r l + \pi r^2$   
 $V = \frac{1}{3} \pi r^2 h$

$LA = \underline{369\pi}$   
 $SA = \underline{450\pi}$   
 $V = \underline{1080\pi}$

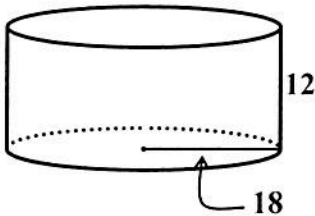
4. Square Pyramid

$B = 64$   
 $P = 32$



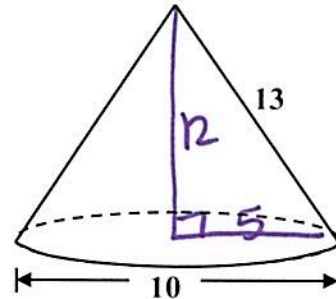
$LA = \underline{80}$   
 $SA = \underline{144}$   
 $V = \underline{64}$

5.



$LA = \underline{432\pi}$     $LA = 2\pi r h$   
 $SA = \underline{1080\pi}$     $SA = 2\pi r h + 2\pi r^2$   
 $V = \underline{3,888\pi}$     $V = \pi r^2 h$

6.



$l = 13$   
 $h = 12$   
 $r = 5$

$LA = \underline{65\pi}$   
 $SA = \underline{90\pi}$   
 $V = \underline{100\pi}$

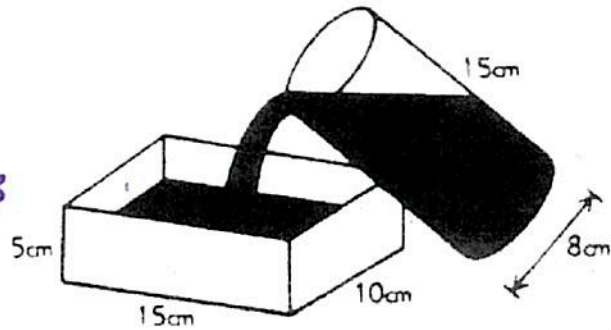
7. The cylindrical glass is full of water, which is poured into the rectangular pan. Will the pan overflow? Provide mathematical evidence of your answer.

$$V_{\text{pan}} = 750 \text{ cm}^3$$

$$V_{\text{cylinder}} = \pi(4)^2 \cdot 15$$

$$= 753.98 \text{ cm}^3$$

Yes!



8. A paint roller has a diameter of 3" and a length of 8". How much paint can be spread on a wall in 35 revolutions?

$$LA = 2\pi r h$$

$$2\pi(1.5)(8)$$

$$= 24\pi(35) = \boxed{840\pi}$$

$$\text{or } \boxed{2,638.938 \text{ in}^2}$$

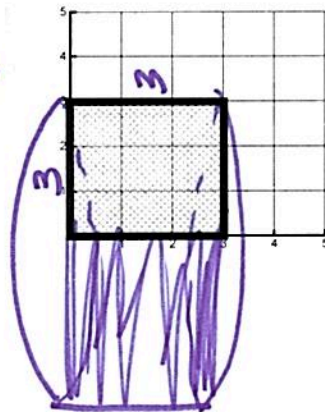
9. Find the SA, SA and V of the figure formed if the square below is rotated 360° about the x-axis. Leave answers in terms of  $\pi$ .

$$\text{SA } \underline{36\pi}$$

$$V \underline{27\pi}$$

$$r = 3$$

$$h = 3$$



$$SA = 2\pi r h + 2\pi r^2$$

$$2\pi(3)(3) + 2\pi(3)^2$$

$$36\pi$$

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

$$\pi(3)^2 \cdot 3$$

$$27\pi$$

10. A pyramid has volume of 108 cu ft and a base area of 27 cu ft. Find its height.

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

$$108 = \frac{1}{3}(27) \cdot h$$

$$108 = 9h$$

$$\boxed{h = 12 \text{ ft}}$$

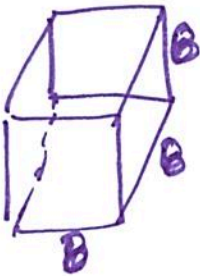
11. Two similar pyramids have lateral areas  $8 \text{ ft}^2$  and  $18 \text{ ft}^2$ . The volume of the larger pyramid is  $108 \text{ ft}^3$ .

Find the volume of the smaller pyramid

$$\frac{\text{LA}}{8} \rightarrow \frac{\sqrt{4}}{\sqrt{9}} = \left(\frac{2}{3}\right)^3 \rightarrow \frac{8}{27} = \frac{x}{108}$$

$$\boxed{x = 32 \text{ ft}^3}$$

12. The total surface area of a cube is  $384 \text{ mm}^2$ , what is its volume?



$$6s^2 = 384$$

$$s^2 = 64$$

$$s = 8$$

$$V = s^3$$

$$= 8^3$$

$$= \boxed{512 \text{ mm}^3}$$

13. A well, with a cylindrical wall of 50 m. and a diameter of 6 m., is dug. The bottom of the well is tapered to a cone with slant height of 5 m. Find the volume of water that this well could hold.

$$V_{\text{cyl}} = \pi r^2 h$$

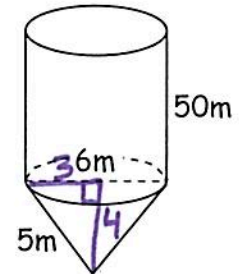
$$\pi (3)^2 50$$

$$= 450\pi$$

$$V_{\text{cone}} = \frac{1}{3} \pi r^2 h$$

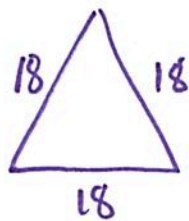
$$\frac{1}{3} \pi (3)^2 4$$

$$= 12\pi$$



$$V = 450\pi + 12\pi = \boxed{462\pi} \text{ m}^3$$

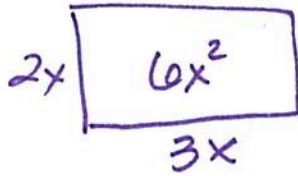
14. Find the area of a regular triangle with side 18.



$$\frac{s^2 \sqrt{3}}{4} = \frac{18^2 \sqrt{3}}{4} = \frac{324 \sqrt{3}}{4}$$

$$\boxed{81 \sqrt{3}}$$

15. The length and width of a rectangle are in a ratio of 2:3. The area is 384. Find the length and width.



$$6x^2 = 384$$

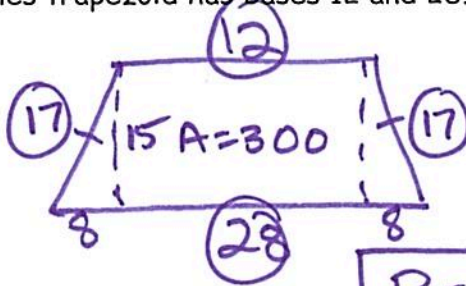
$$x^2 = 64$$

$$x = 8$$

$$l = 16$$

$$w = 24$$

16. An isosceles trapezoid has bases 12 and 28. The area is 300. Find the perimeter of the trapezoid.



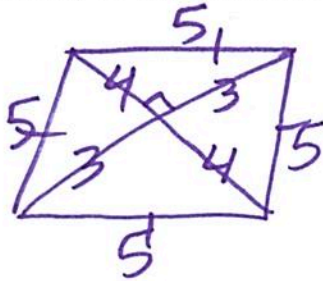
$$300 = \frac{1}{2}h(28+12)$$

$$300 = \frac{1}{2}h(40)$$

$$h = 15$$

$$P = 74$$

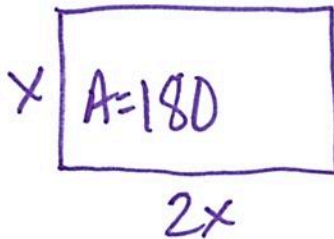
17. Find the area of a rhombus with one diagonal 8 and side 5.



$$A = \frac{1}{2}(8)(6)$$

$$A = 24$$

18. The area of a rectangle is 180. The height is twice the base. Find the perimeter.



$$2x \cdot x = 180$$

$$2x^2 = 180$$

$$x^2 = 90$$

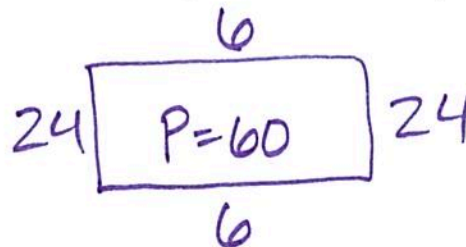
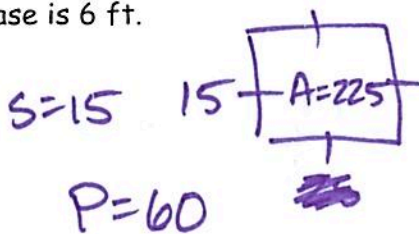
$$P = 56.922$$

$$\text{or}$$

$$18\sqrt{10}$$

$$x = 3\sqrt{10} \sim 9.487$$

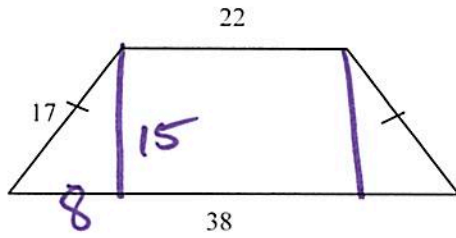
19. The area of a square is 225 sq. ft. Find the area of a rectangle with the same perimeter whose base is 6 ft.



$$A = 6 \cdot 24$$

$$A = 144$$

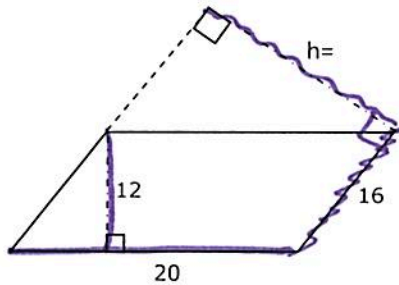
20. Find the area of the trapezoid.



$$A = \frac{1}{2}(15)(22+38)$$

$$A = 450$$

21. Find the area of the parallelogram. Then find the missing height.



$$A = 12 \cdot 20$$

$$A = 240$$

$$16 \cdot h = 240$$

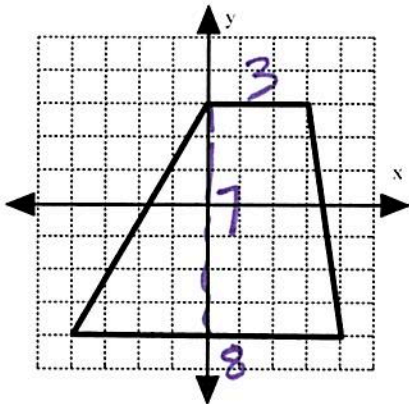
$$h = 15$$

22. The floor of a patio is a regular octagon. Each side of the octagon is 8 feet and the area of the floor is 309 square feet. You want to build a smaller scale model patio in the same shape as the original patio. The smaller patio will have a perimeter of 24 inches. What will be the area of the smaller patio?

$$\begin{aligned} \text{Large } P &= 64 \text{ Ft} \\ \text{Small } P &= 24 \text{ in} \end{aligned}$$

$$\begin{aligned} \text{Scale} & \quad \text{Scale} & \quad \text{Area} \\ \frac{64}{24} & \rightarrow \left(\frac{8}{3}\right)^2 = \frac{64}{9} = \frac{309}{x} \\ x &= 43.453 \text{ in}^2 \end{aligned}$$

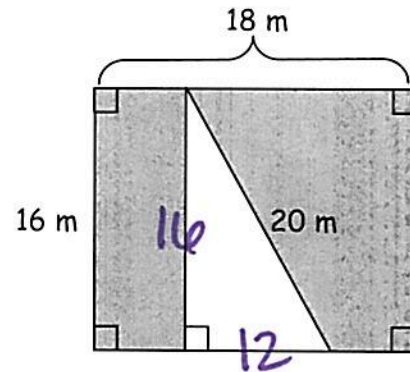
23. Find the area of the following figure.



$$A = \frac{1}{2}(7)(3+8)$$

$$A = 38.5$$

24. Find the area of the shaded region.



$$A_{\square} = 16 \cdot 18 = 288$$

$$A_{\triangle} = \frac{16 \cdot 12}{2} = 96$$

$$A = 288 - 96 = 192 \text{ m}^2$$

