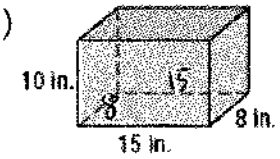
Ch. 12 Review
Geometry

Name Key 1
Per. _____ Date _____

**For questions 1-12 Find the lateral area and the surface area.**

1)

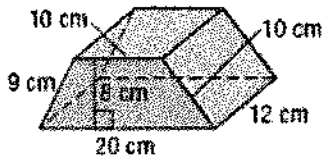



$L = Ph$ $S = L + 2B$

$L = 46(10)$ $460 + 2(15*8)$

$L = 460 in^2$ $\boxed{700 in^2}$

2)



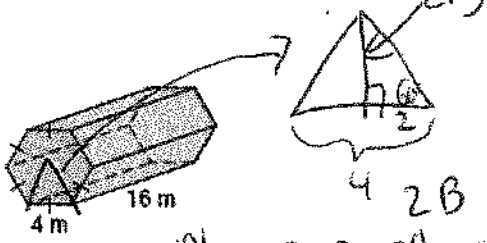

$L = Ph$ $S = L + 2B$

$L = (10+10+9+12)(12)$ $588 + 2(\frac{1}{2})(18)(8)$

$L = 588 cm^2$ $588 + 240$

$\boxed{828 cm^2}$

3)



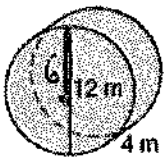

$L = Ph$ $S = 384 + 2(\frac{1}{2}ash)$

$L = 4(6)(16)$ $384 + 2(\frac{1}{2})2\sqrt{3}(6)(4)$

$L = 24(16)$ $384 + 83.1$

$\boxed{L = 384 m^2}$ $\boxed{S = 467.1 m^2}$

4)



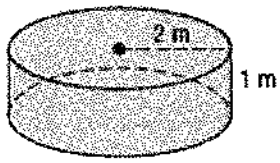

$L = 2\pi rh$ $S = L + 2\pi r^2$

$L = 12\pi(4)$ $S = 150.8 + 2\pi(6)^2$

$L = 48\pi$ $S = 150.8 + 72\pi$

$\boxed{L = 150.8 m^2}$ $\boxed{S = 376.99 m^2}$

5)



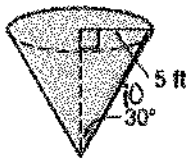

$L = 2\pi rh$ $S = L + 2\pi r^2$

$L = 2\pi(2)(1)$ $126 + 2\pi(2)^2$

$L = 4\pi$ $126 + 8\pi$

$\boxed{L = 12.6 m^2}$ $\boxed{S = 37.7 m^2}$

6)



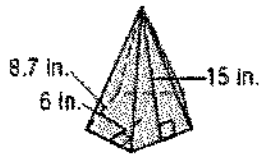

$L = \pi rl$ $S = L + \pi r^2$

$L = \pi(5)(10)$ $157 + \pi 5^2$

$L = 50\pi$ $157 + 25\pi$

$\boxed{157 ft^2}$ $\boxed{235.5 ft^2}$

7)




$L = \frac{1}{2}Pl$ $S = L + B$

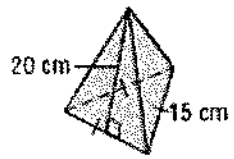
$L = \frac{1}{2}(8.7*5)15$ $S = 326.3 + \frac{1}{2}ash$

$\frac{1}{2}(43.5)15$ $326.3 + \frac{1}{2}6(8.7)(5)$

$= \boxed{326.3 in^2}$ $326.3 + 130.5$

$\boxed{456.75 in^2}$

8)



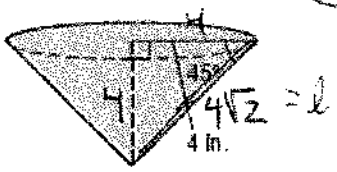

$L = \frac{1}{2}Pl$ $S = L + B$

$\frac{1}{2}(15+3)(20)$ $450 + \frac{\sqrt{3}}{4}15^2$

$10(45$ $450 + 97.4$

$\boxed{450 cm^2}$ $\boxed{547.4 cm^2}$

9)




$L = \pi rl$ $S = L + \pi r^2$

$\pi(4)(4\sqrt{2})$ $S = 71.1 +$

$\boxed{71.1 in^2}$ $\pi(4)^2$

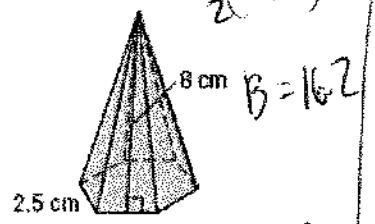
$71.1 + 16\pi$

$\boxed{121.9 in^2}$

$B = \frac{1}{2}ap$

$\frac{1}{2}(1.25\sqrt{3})(2.5)(6)$

10)




$B = 16.2$

$L = \frac{1}{2}Pl$

$L = \frac{1}{2}(2.5*6)(8)$

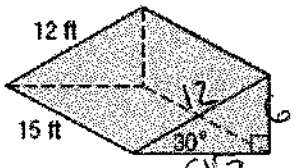
$L = 60\ cm^2$

$S = L + B$

$= 60 + 16.2$

$76.2\ cm^2$

11)




$L = Ph$

$L = (12+6+6\sqrt{3})15$

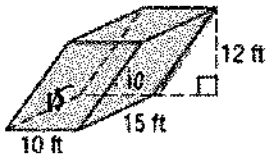
$L = 425.9\ ft^2$

$S = L + 2B$

$425.9 + 2\frac{1}{2}(6\sqrt{3})$

$488.3\ ft^2$

12)




$L = Ph$

$L = 50(12)$

$600\ ft^2$

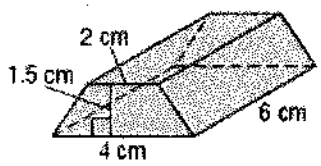
$S = L + 2B$

$600 + 2(15*10)$

$900\ ft^2$

**For questions 13-22 Find the volume.**

13)

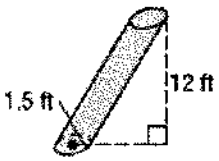



$V = Bh$

$V = \frac{1}{2}(2+4)(1.5)(6) = 27\ cm^3$

$V = \frac{1}{2}(6)(1.5)(6)$

14)

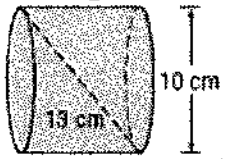



$V = Bh$

$V = \pi 1.5^2 * 12$

$V = 84.8\ ft^3$

15)




$10^2 + h^2 = 13$

$100 + h^2 = 169$

$-100 \quad -100$

$h^2 = 69$

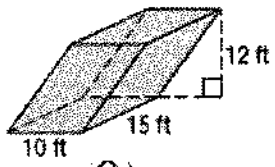
$h = 8.3$

$V = \pi r^2 h$

$V = \pi 5^2 8.3$

$V = 651.9\ cm^3$

16)

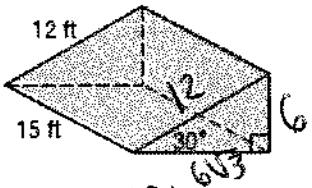



$V = Bh$

$V = 15*10*12$

$V = 1800\ ft^3$

17)

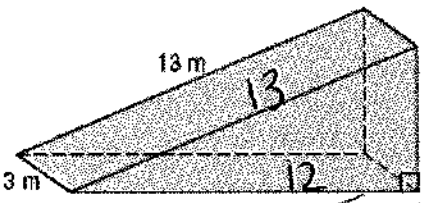



$V = Bh$

$V = \frac{1}{2}6(6\sqrt{3})(15)$

$V = 467.7\ ft^3$

18)



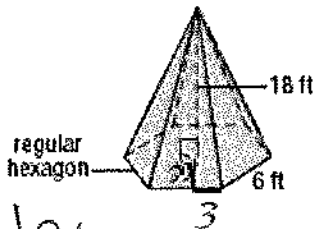

$12^2 + 5^2 = 13^2$

$V = Bh$

$V = \frac{1}{2}(5*12)(3)$

$V = 90\ m^3$

19)



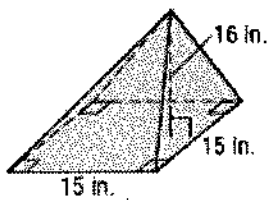

$V = \frac{1}{3}Bh$

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

$= \frac{1}{3}(\frac{1}{2}\cdot 3\sqrt{3}\cdot 6\cdot 6)(18)$

$561.2\ ft^3$

20)

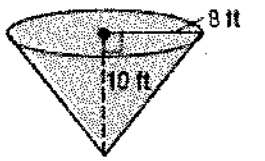



$V = \frac{1}{3}Bh$

$V = \frac{1}{3}15*15*16$

$V = 1200\ in^3$

21)




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

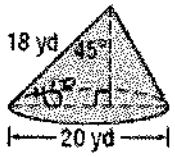
$V = \frac{1}{3}\pi 8^2 * 10$

$V = \frac{1}{3}640\pi$

$V = 670.2\ ft^3$

$h\sqrt{2} = 18$, $h = \frac{18}{\sqrt{2}} = 12.73$ or $\sin 45 = \frac{h}{18}$, $18 \sin 45 = h$, $h = 12.73$

22)



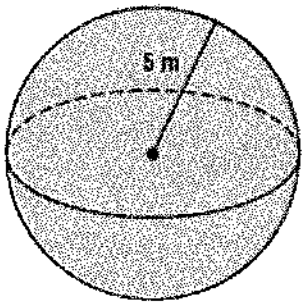

$V = \frac{1}{3}Bh$

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

$V = \frac{1}{3}\pi(10)^2(12.73)$

$V = 1332.9 yd^3$

23) Find the surface area.




$4\pi r^2$

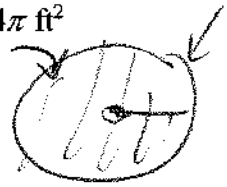
$4\pi 5^2$

$25 \cdot 4\pi$

$100\pi$

$314.2 m^2$

24) Find the surface area of a hemisphere, if the area of the great circle is $4\pi$ ft$^2$



$\pi r^2 = 4\pi$

$r = 2$

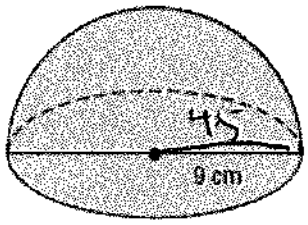
$SA = 3\pi r^2$

$= 3\pi \cdot 2^2$

$S = 12\pi$

$S = 37.7 ft^2$

25) Find the surface area.

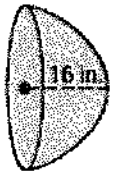



$S = 3\pi r^2$

$S = 3\pi(4.5)^2$

$190.9 cm^2$

26) Find the volume

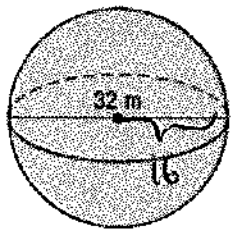



$V = \frac{2}{3}\pi r^3$

$= \frac{2}{3}\pi 16^3$

$V = 8578.6 in^3$

27) Find the volume.




$V = \frac{4}{3}\pi r^3$

$V = \frac{4}{3}\pi 16^3$

$V = 17,157.3 m^3$

28) Find the volume of a hemisphere if the diameter is 48yd.


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

$V = 28932.9 yd^3$

2) Two similar pyramids have heights of 4 inches and 7 inches. What is the ratio of the volume of the small pyramid to the volume of the large pyramid.

$4 : 7$

$4^3 : 7^3$

$64 : 343$

30) Two similar cylinders have surface areas of $40\pi$ square feet and $90\pi$ square feet. What is the ratio of the height of the large cylinder to the height of the small cylinder.

$*sf^2$

$40\pi$ $\quad$ $90\pi$

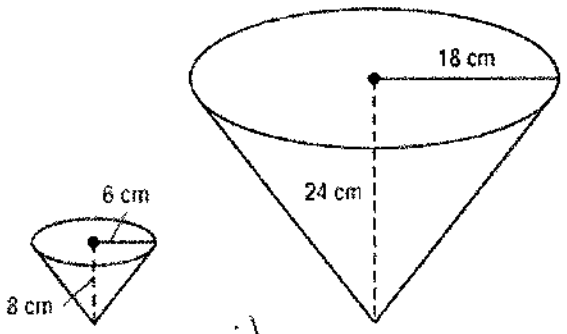
$\frac{90\pi}{40\pi} = sf^2$

$\sqrt{2.25} = \sqrt{sf^2}$

$1.5 = sf$

Determine whether each pair of solids is *similar, congruent,* or *neither.* If the solids are similar, state the scale factor of the smaller solid to the bigger solid.

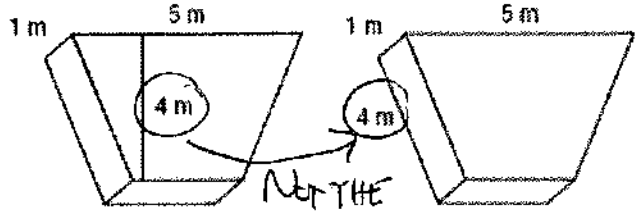
31)




similar

sf 3

32)




Not the same part of the figure!

Neither!

~~Congruent~~!

~~SF = 1~~

**33)** Two similar pyramids have heights of 4 inches and 7 inches What is the ratio of the volume of the small pyramid to the volume of the large pyramid?

$4:7$

$4^3:7^3$

$64:343$

34) Two similar ice cream cones are made of a half sphere on top and a cone on bottom. They have radii of 1 inch. and 1.75 inches respectively. What is the ratio of the volume of the small ice cream cone to the volume of the large ice cream cone? Round to the nearest tenth.

$1:1.75$

$1^3:1.75^3$

$1:5.35$