Geometry Chapter 11 Review worksheet Name Key

For each polyhedron, use Euler's Formula to find the missing number.

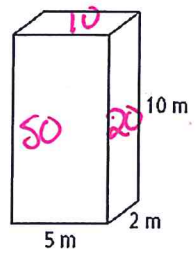
1. Faces: 5 Edges: 8 Vertices: 5

$F+V=E+2$

$F+5=8+2$

Find the lateral area and surface area of each prism.

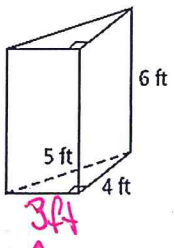
2.



$SA = 10+10+20+20+50+50$

160 m²

3.



3ft

use $x^2+4^2=5^2$

$LA = ph$

$12(6) = 72 \text{ ft}^2$

$SA = LA + 2B$

$= 72 + 2(6)$

84 ft²

$P = 3+4+5$

12

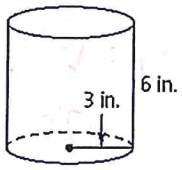
$h = 6$

$B = \frac{1}{2}(3)(4)$

$= 6$

Find the lateral area of each cylinder to the nearest whole number.

4.



$LA = 2\pi rh$

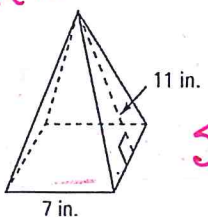
$2\pi(3)(6) = 36\pi \approx 113 \text{ in}^2$

Find the lateral area and surface area of each pyramid to the nearest whole number

$P = 4(7) = 28$

$l = 11$

$B = 7.7$

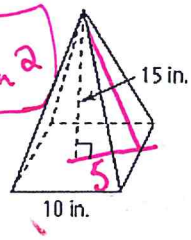


$LA = \frac{1}{2}Pl$

$\frac{1}{2}(28)(11) = 154 \text{ in}^2$

$SA = 154 + 49$

$= 203 \text{ in}^2$



$l^2 = 5^2 + 15^2$

$l = 15.8$

$P = 10.4 = 40$

$B = 10 \cdot 10 = 100$

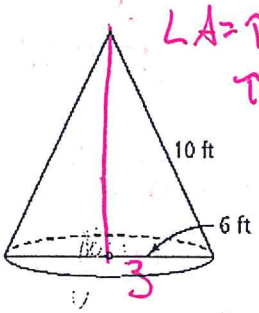
$LA = \frac{1}{2}(40)(15.8)$

316 in²

$SA = 316 + 100 = 416 \text{ in}^2$

$r = 3$

$l = 10$



$LA = \pi rl$

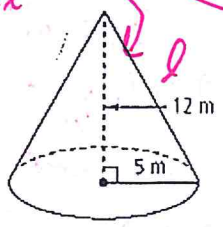
$\pi(3)(10) = 30\pi$

$SA = LA + \pi r^2$

$= 30\pi + \pi(3)^2$

$39\pi \text{ ft}^2$

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



$LA = \pi(5)(13) = 65\pi \text{ m}^2$

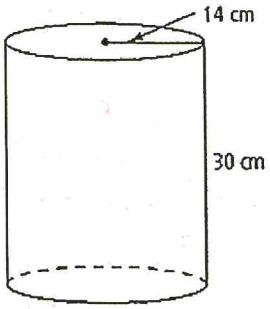
$SA = 65\pi + \pi(5)^2$

25π

$90\pi \text{ m}^2$

Find the volume of each rectangular prism or cylinder.

9.

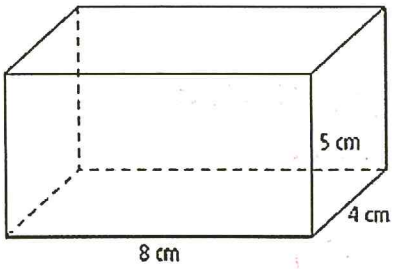


$V = \pi r^2 h$

$\pi(14)^2(30)$

5880π or $18,472.56\ cm^3$

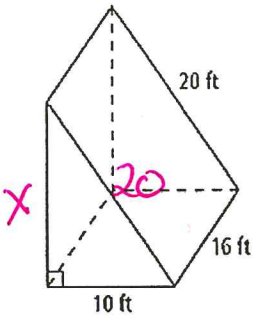
10.



$5 \cdot 4 \cdot 8$

$160\ cm^3$

11.



$x^2 + 10^2 = 20^2$

$x^2 = 300$

$x = 17.3$

$B = \frac{1}{2}(17.3)(10)$

$= 86.5$

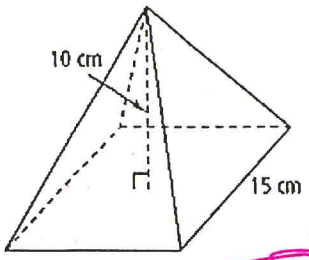
$V = Bh$

$V = 86.5(16)$

$V = 1384\ ft^3$

Find the volume of each square pyramid or cone. Round to the nearest tenth if necessary.

12.



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

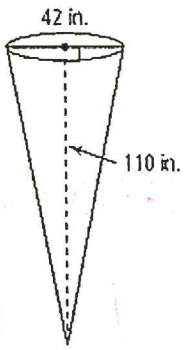
$B = 15.15$

225

$\frac{1}{3}(225)(10)$

$750\ cm^3$

13. $r = 21$



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

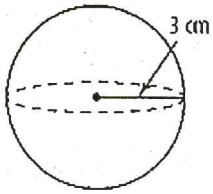
$\frac{1}{3}\pi(21)^2(110)$

16170π

$50,799.55\ in^3$

Find the surface area and volume of each sphere. Leave each answer in terms of π.

14.



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

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

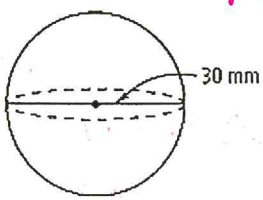
$9 \cdot 27 \cdot \frac{4}{3}\pi$

$36\pi\ cm^3$

$4\pi r^2 = SA = 4\pi(3)^2$

$36\pi\ cm^2$

15. $r = 15$



$\frac{4}{3}\pi(15)^3$

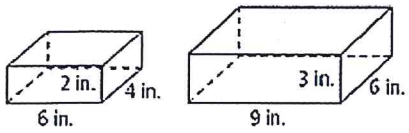
$4500\pi\ mm^3$

$4\pi(15)^2$

$900\pi\ mm^2$

Are the two figures similar? If so, give the scale factor of the first figure to the second figure. Give the ration of the areas and ration of the volumes.

16.



$\frac{2}{3} \cdot \frac{4}{6} \quad \frac{6}{9}$

$= \quad = \quad =$

$= 2/3 = 2/3$ yes

area $= \frac{2^2}{3^2} = \frac{4}{9}$

volume $\frac{2^3}{3^3} = \frac{8}{27}$