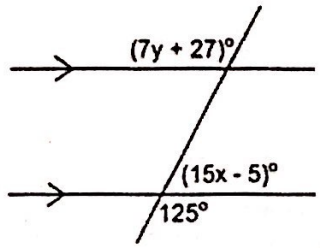
Name: Key

Review:

1.) Solve for x and y – show your work!



X = 4

Y = 14

$15x - 5 + 125 = 180$

$15x = 60$

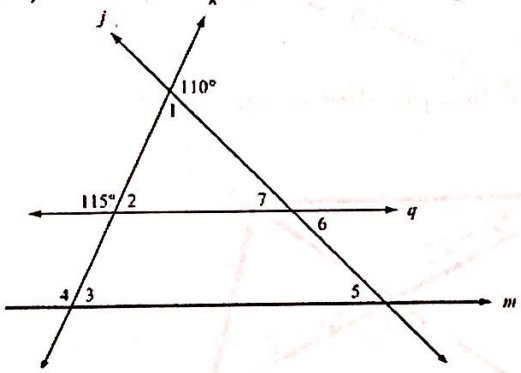
$x = 4$

$7y + 27 = 125$

$7y = 98$

$y = 14$

2.) Solve for the indicated angles –



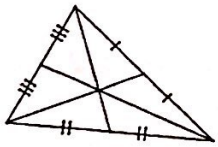
<1 = 70 <2 = 65

<3 = 65 <4 = 135

<5 = 45 <6 = 45

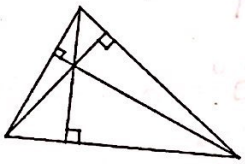
<7 = 45

3.) In each figure below, tell what point of concurrency is shown and what constructions form that point:



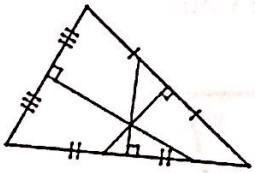
Point: Centroid

Formed by: Medians



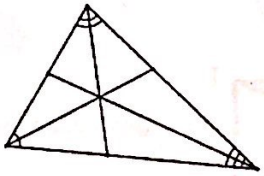
Point: Orthocenter

Formed by: altitudes



Point: Circumcenters

Formed by: ⊥ bisectors



Point: Incenter

Formed by: ∠ bisector

4) **D is the centroid of ΔABC, $\overline{AE} = 12$, $\overline{AD} = 10$, $\overline{CF} = 12$. Find the length of each segment.**

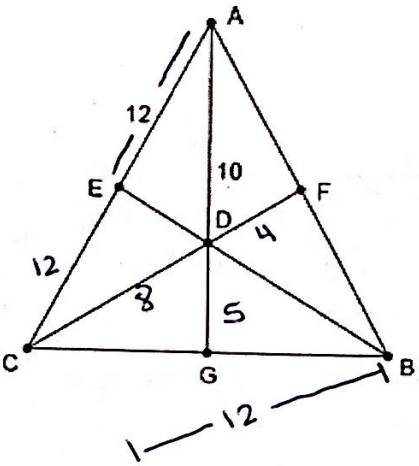
$\overline{DG}$ 5

$\overline{AG}$ 15

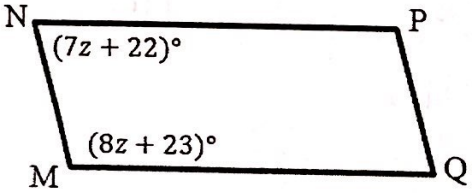
$\overline{EC}$ 12

$\overline{AC}$ 24

$\overline{DF}$ 4



5) The quadrilateral is a parallelogram. Find the value of z *and* $m\angle M$ *and* $m\angle N$.



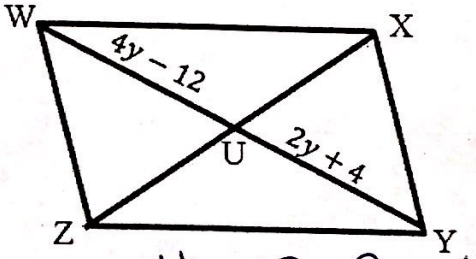
$15z + 45 = 180$

$z = 9$

$m\angle N = 85°$

$m\angle M = 95°$

6) WXYZ is a parallelogram. Find WY.



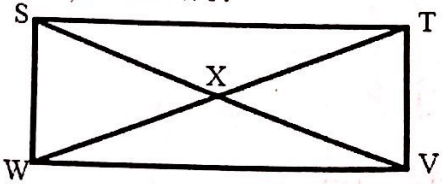
$4y - 12 = 2y + 4$

$2y = 16$

$y = 8$

$WY = 40$

7) STVW is a rectangle. $SV = 4x - 10$ *and* $WT = 2x + 40$. Find the value of x, SV *and* WT.



$4x - 10 = 2x + 40$

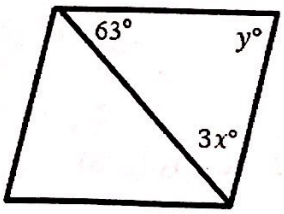
$2x = 50$

$x = 25$

$SV = 90$

$WT = 90$

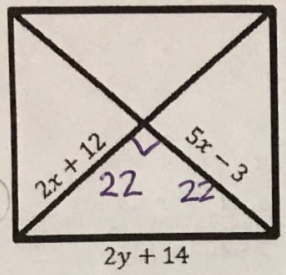
8) The quadrilateral is a rhombus. Find the value of x *and* y.



$x = 21$

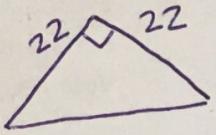
$y = 54$

9) The quadrilateral is a square. Find the EXACT values of *x* and *y*.



$2x+12=5x-3$

$x=5$



$22^2+22^2=h^2$

$\sqrt{968}=h^2$

$2y+14=\sqrt{968}$

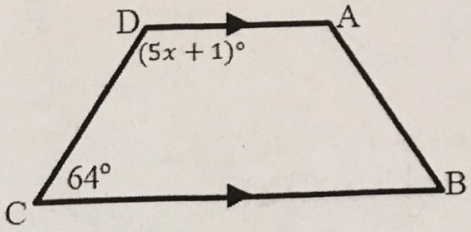
$2y+14=22\sqrt{2}$

$2y=22\sqrt{2}-14$

$y=11\sqrt{2}-7$

$y\approx 8.6$

10) In the diagram, ABCD is an isosceles trapezoid. Find the value of *x*.



$x=23$

11.) A cylinder has a surface area of 224π in^2 and a diameter of 14in. Find the height of the cylinder.

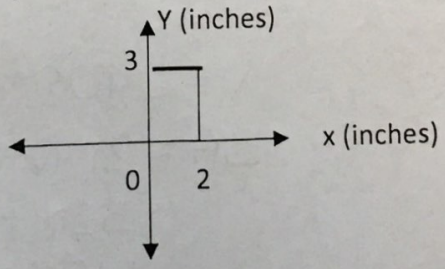
h = 9 in

11a.) Find the height of a cone with a volume of 150 in^3 and a radius of 10 in

$h=1.43$

12.) Refer to the diagram at the right: If the figure is rotated about the y-axis, identify the resultant shape

a.) a line
b.) a cylinder
c.) cone
d.) parabola



$r=2 \quad h=3$

13.) Find the volume and surface area of the resulting 3D shape in problem #12 Exact answer!

Volume: 12π in^3

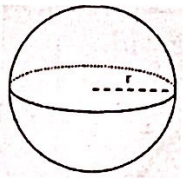
Surface Area: 20π in^2

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

$8\pi+12\pi$

Find the volume and the surface area of each of the following. Show your work!

14.)



1 81
144
225

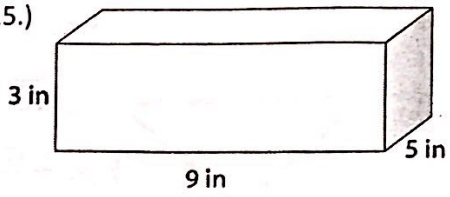
Radius = 7m

EXACT ANSWERS

Surface Area: $196\pi\ m^2$

Volume: $\frac{1372\pi\ m^3}{3}$ $\frac{4\pi 7^3}{3}$

15.)

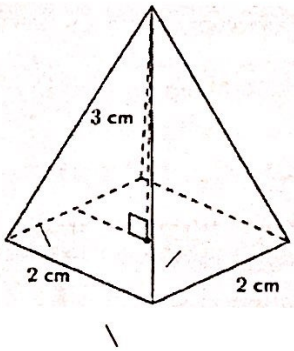


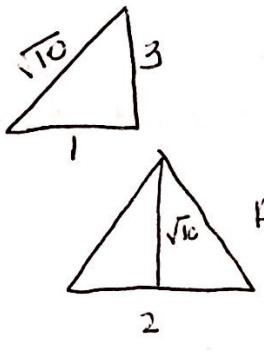
Exact answers

Surface Area: $174\ in^2$

Volume: $135\ in^3$

16.)





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

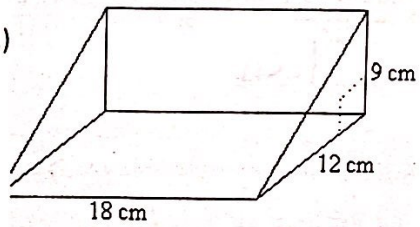
$\frac{2\sqrt{10} - \sqrt{10}}{2}$

Round to nearest hundredths

Surface Area: $4 + 4\sqrt{10} = 16.7\ cm^2$

Volume: $4\ cm^3$

17.)



$B = \frac{9(12)}{2}$

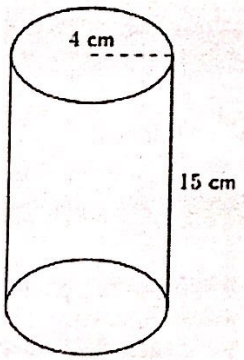
54

ROUND TO nearest hundredths

Surface Area = $756\ cm^2$

Volume = $972\ cm^3$

18)



$V = 240\pi\ cm^3$

$SA = 2\pi(6) + 2\pi(4)15$

$= 32\pi + 120\pi$

$152\pi\ cm^2$

19) Cone: diameter = 10 m, height = 12 m $V = \frac{Bh}{3}$

$r = 5$ 100π

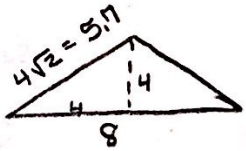
$V = 300\pi\ m^3$ $= 100\pi\ m^3$

$SA = 170\pi\ m^2$ $SA = 90\pi\ m^2$

20) Rectangular prism: l = 6m, w = 5m, h = 3m

$V = 90m^3$

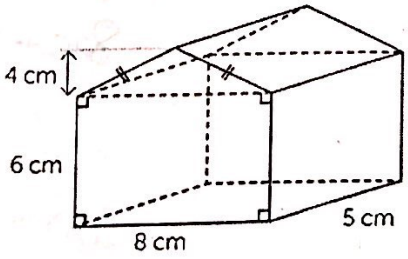
$SA = 126m^2$



$B = \frac{8(4)}{2} = 16$

21.) Find the surface area:

Answer: _____



$SA = 2(6)(8) + 2(6)(5) + \frac{1}{2}(8)(5)$

$= 196\ cm^2$

$SA = 3(2+4)\ 4\sqrt{2}(5) + 4\sqrt{2}(5)$

$= 88.57\ cm^2$

$SA_T = 284.56\ cm^3$