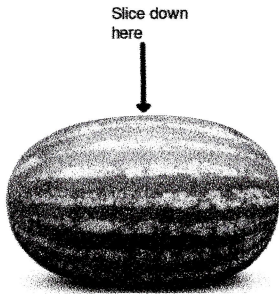


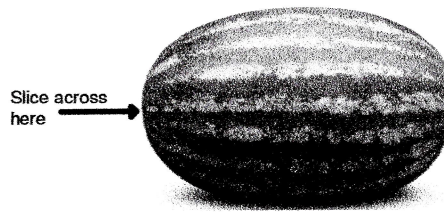
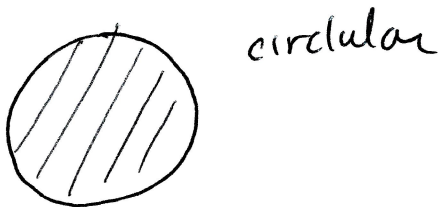
For 1 and 2 draw or describe the Cross Section created.

SOLUTIONS

1. A watermelon



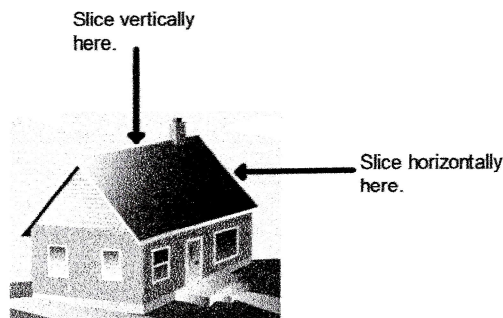
a) Vertical Cross Section:



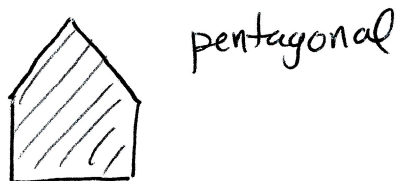
b) Horizontal Cross Section



2. Use the picture of a house at the right:



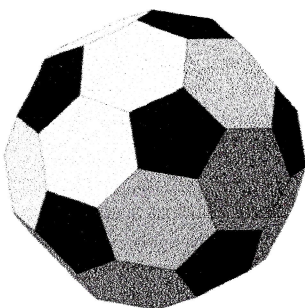
a) Vertical Cross Section:



b) Horizontal Cross Section



3. The Truncated Icosahedron shown below is a polyhedron with 32 faces: 12 regular pentagons and 20 regular hexagons. It also has 90 edges. Find the number of vertices.



of Vertices = 60

$$F + V = E + 2$$

$$32 + V = 90 + 2$$

$$\begin{array}{r} 32 + V = 92 \\ -32 \quad -32 \end{array}$$

$$V = 60$$

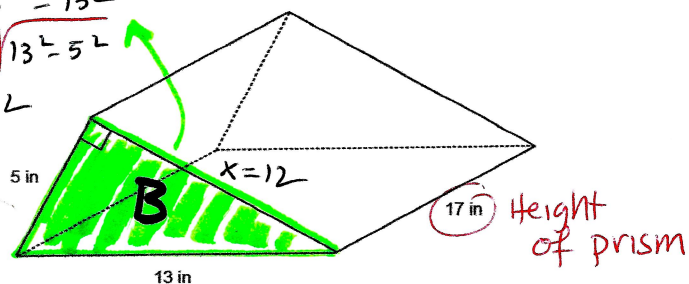
Find the Surface Area of each. Round to the nearest hundredth as needed.

4. Right Triangular Prism.

$$x^2 + 5^2 = 13^2$$

$$\sqrt{x^2} = \sqrt{13^2 - 5^2}$$

$$x = 12$$



$$SA = LA + 2B$$

$$LA = (\text{perim})(h)$$

$$(5+12+13)(17)$$

$$(30)(17)$$

$$LA = 510$$

$$in^2$$

$$B = \frac{1}{2}(12)(5) = 30$$

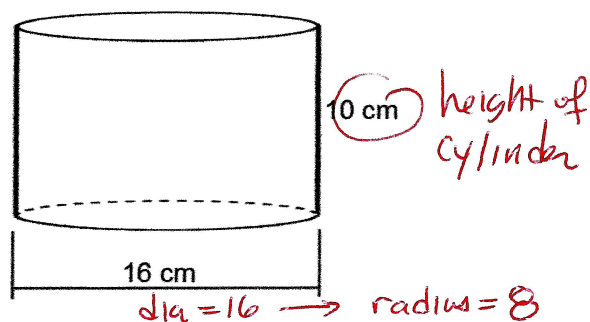
$$2B = 60 in^2$$

$$SA = 510 + 60$$

$$SA = 570$$

$$in^2$$

5. Cylinder.



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

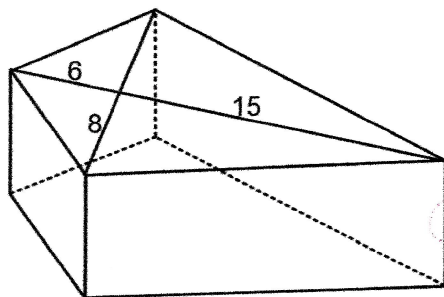
$$= 2\pi(8)(10) + 2\pi(8)^2$$

$$= 160\pi + 128\pi$$

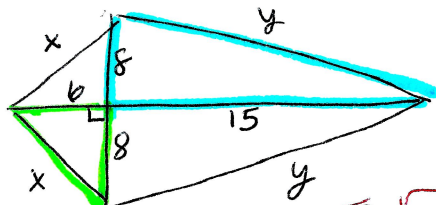
$$= 288\pi$$

$$SA = 904.78 cm^2$$

6. Prism with a Kite for its base.



BASE B



$$\sqrt{x^2} = \sqrt{6^2 + 8^2}$$

$$x = 10$$

$$\sqrt{y^2} = \sqrt{8^2 + 15^2}$$

$$y = 17$$

$$SA = LA + 2B$$

$$LA = (\text{perim})(\text{height})$$

$$= (10+10+17+17)(7)$$

$$LA = 378$$

$$B = \frac{1}{2} d \cdot d$$

$$= \frac{1}{2}(16)(21)$$

$$= 168$$

$$2B = 336$$

$$SA = 378 + 336$$

$$SA = 714$$