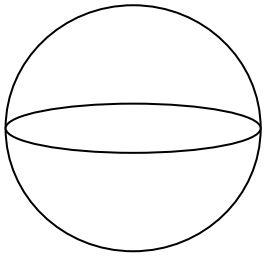
SA of Circular Solids HW Day 12 Name KEY

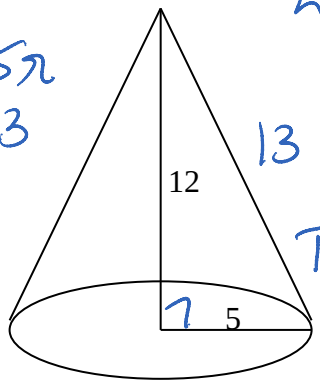
Find the total surface area for each shape for 1-3.

1. Sphere with radius = 6.

$TSA = 4\pi(6)^2 = 144\pi \text{ u}^2$



2. Cone. Radius = 5, altitude = 12.



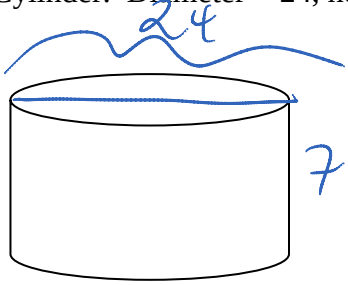
$C = 25\pi$
$\ell = 13$

$LA = \frac{25\pi \cdot 13}{2}$
$= 162.5\pi$

$B = \pi(5)^2 = 25\pi$

$TSA = 162.5\pi + 25\pi$
$= 187.5\pi \text{ u}^2$

3. Cylinder. Diameter = 24, height = 7.



$LA = 24\pi \cdot 7$
$= 168\pi$

$B = \pi(12)^2 = 144\pi$

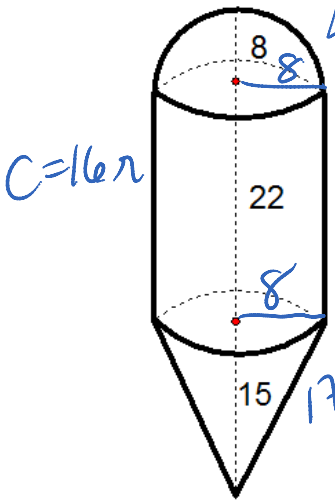
$TSA = 168\pi + 2(144\pi)$
$= 456\pi \text{ u}^2$

4. Complete the analogy:

Cylinder is to prism as cone is to pyramid.

5. Find the total surface area of the combined shapes.
(Hint: Do not include any faces that would be inside the shape.)

a) Hemisphere on cylinder on cone



$C = 16\pi$

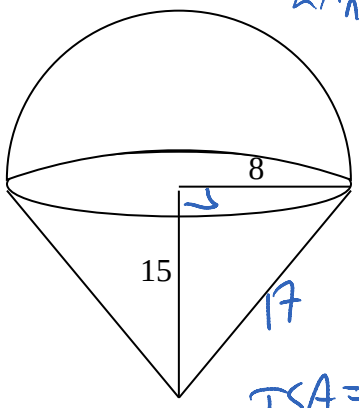
$LA_{cone} = \frac{16\pi \cdot 17}{2}$
$= 136\pi$

$LA_{cyl} = 16\pi \cdot 22$
$= 352\pi$

$LA_{hemisphere} = \frac{4\pi(8)^2}{2}$
$= 128\pi$

$TSA = 136\pi + 352\pi + 128\pi = 616\pi \text{ u}^2$

b) Hemisphere on top of cone.



$LA_{hemi} = \frac{4\pi(8)^2}{2}$
$= 128\pi$

$LA_{cone} = \frac{16\pi \cdot 17}{2}$
$= 136\pi$

$TSA = 128\pi + 136\pi$
$= 264\pi \text{ u}^2$