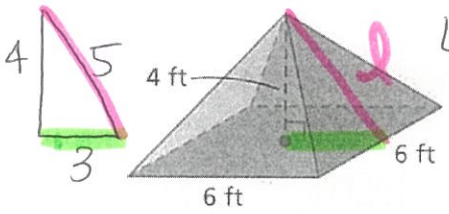
Name: key (solutions) Date: Period:

HW #11-8

1. Find the lateral area and the surface area of the (regular) square pyramid. Exact answer.



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

$= \frac{1}{2}(4 \cdot 6)(5)$

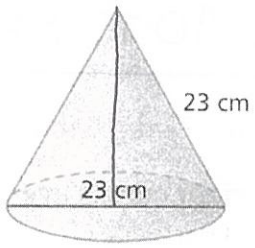
$= \boxed{60 \text{ ft}^2}$

$SA = \frac{1}{2}Pl + B$

$= 60 + (6 \cdot 6)$

$= \boxed{96 \text{ ft}^2}$

2. Find the lateral area and the surface area of the right cone. Exact answer.



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

$= \frac{1}{2}(\pi(23))(23)$

$= \boxed{264.5\pi \text{ cm}^2}$

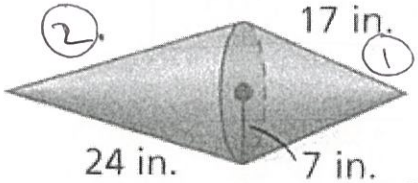
$SA = \frac{1}{2}Pl + B$

$= 264.5\pi + \pi(11.5)^2$

$= 264.5\pi + 132.25\pi$

$= \boxed{396.75\pi \text{ cm}^2}$

3. Find the surface area of the composite figure. Exact answer.



$LA\,① + LA\,②$

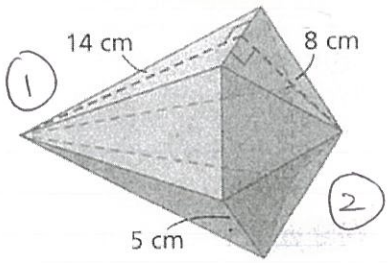
$= \frac{1}{2}Pl + \frac{1}{2}Pl$

$= \frac{1}{2}(2\pi(7)(17)) + \frac{1}{2}(2\pi(7)(24))$

$= 119\pi + 168\pi$

$= \boxed{287\pi \text{ in}^2}$

4. Find the surface area of the composite figure. Exact answer.



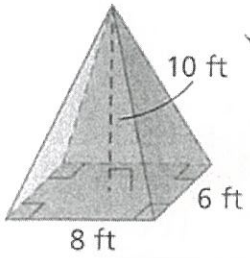
$LA① + LA②$

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

$= \frac{1}{2}(5 \cdot 6)(14) + \frac{1}{2}(5 \cdot 6)(8)$

$= 210 + 120 \longrightarrow = \boxed{330 \text{ cm}^2}$

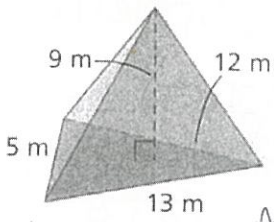
5. Find the volume of the pyramid. Exact answer.



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

$= \frac{(8)(6)(10)}{3}$ $= \boxed{160 \text{ ft}^3}$

6. Find the volume of the pyramid. Exact answer.



*base is a right Δ! Pyth Triple 5-12-13

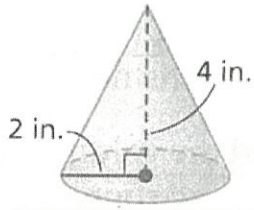
$V = \frac{Bh}{3}$

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

$V = \frac{(30)(9)}{3}$

$= \boxed{90 \text{ m}^3}$

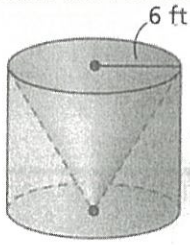
7. Find the volume of the cone. Exact answer.



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

$V = \frac{\pi(2)^2(4)}{3} = \boxed{\frac{16\pi}{3}\ in^3}$

8. Find the volume of the composite figure. (cone is hollow inside the cylinder). Exact answer.



cylinder − cone

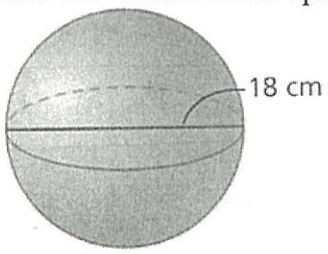
$= \frac{Bh}{} - \frac{Bh}{3}$

$= \pi(6)^2(10) + \frac{\pi(6)^2(10)}{3}$

$= 360\pi - 120\pi$

$= \boxed{240\pi\ ft^3}$

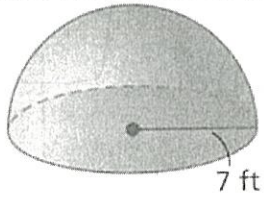
9. Find the volume of the sphere. Exact answer.



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

$= \frac{4}{3}\pi(9)^3 = \boxed{972\pi\ cm^3}$

10. Find the volume of the hemisphere. Exact answer.

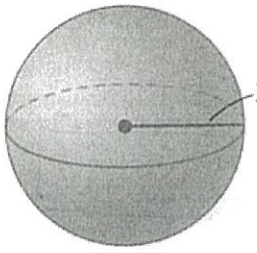


$V = \frac{1}{2}\left(\frac{4}{3}\pi r^3\right)$

$V = \frac{1}{2}\left(\frac{4}{3}\pi(7)^3\right)$

$= \boxed{\frac{686\pi}{3}\ ft^3}$

11. Find the surface area of the sphere. Exact answer.

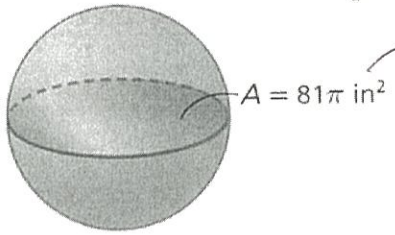


$SA = 4\pi r^2$

$= 4\pi(21)^2$

$= \boxed{1764\pi\ in^2}$

12. Find the surface area of the sphere. Exact answer.



$\pi r^2 = 81\pi$

$r^2 = 81$

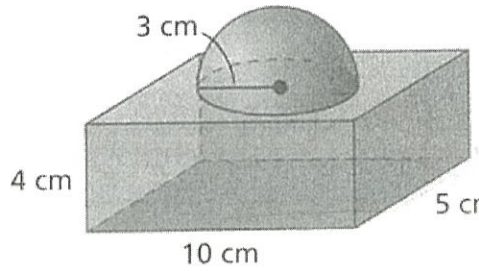
$r = 9$

$SA = 4\pi r^2$

$= 4\pi(9)^2$

$= \boxed{324\pi\ in^2}$

13. Find the surface area of the composite figure. Round to two decimal places.



prism − great O + ½ sphere

$Ph + 2B - \pi r^2 + \frac{1}{2}(4\pi r^2)$

$(2\cdot 10 + 2\cdot 5)(4) + 2(5\cdot 10) - \pi(3)^2 + 2\pi(3)^2$

$(30)(4) + 100 + 9\pi \approx \boxed{248.27\ cm^2}$