12.4 Spheres Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Period \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Draw your sphere and label the radius, r.

2. What is the formula for the surface area of the sphere? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. What is the formula for the volume of a sphere? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Problems

4. Find the area and volume of a sphere whose radius is 5 cm.

5. Find the area and volume of a sphere whose radius is $\frac{3}{4}k$.

6. Find the radius and volume of the sphere if the area is 324π $in^{2}$.

7. Find the radius and area of the sphere if the volume is 288π $m^{3}.$

8. A hemispheric bowl with radius 25 contains water whose depth is 10. What is the area of the water’s surface?

9. Four congruent solid metal balls fit snugly inside a cylindrical can. A geometry student claims that two extra balls of the same size can be put into the can, provided all six balls can be melted and the molten liquid poured into the can. Is the student correct? (Hint: Let the radius of each ball be r.)