Spheres in Play

Name_____






$$SA_{sphere} = 4\pi r^2$$

$$V_{sphere} = \frac{4}{3}\pi r^3$$

Part I: *Directions:* Using the formulas for Surface Area (*SA*) and Volume (*V*), complete the "Diameter", "Radius", "Surface Area" and "Volume" columns in the following chart. Measurements are made in centimeters and results are rounded to the *nearest tenth.*

	Ball	Diameter (cm)	Radius (cm)	Surface Area (cm^2)	Volume (cm^3)	Mass (grams)	Float ???
1	Basketball	23.9				620	
2	Soccer Ball		12.7			420	
3	Baseball			167.4		142	
4	Tennis Ball				150.5	56.7	
5	Softball	11.4				177	
6	Golf Ball		2.2			45	
7	Bowling Ball (10 pound)			1465.7		4500	
8	Bowling Ball (14 pound)		10.8			6300	

Part II: *Directions:* Using the mass from the chart and the "Density" formula below, determine which, if any, of the balls will float in water. Fill in "YES" or "NO" in the last column of the chart.

$$Density = \frac{Mass}{Volume}$$

If the density is >1, the object will sink.

If the density is <1, the object will float.