Name: _____ Date: _____ Period: _____

Density Worksheet

Procedure

1. Use the data table below and the attached graph paper to plot the mass and volume of the 5 samples of the minerals galena below. Note: the resulting line you plot is the minerals density!
2. Calculate the density of samples 1-5 and place the value in the "density" column of the data table below.
3. Answer the questions below.

Sample	Size	Mass	Volume	Density (d=m/v)
1	small	15 g	2 cm^3	
2	↓	60 g	8 cm^3	
3		120 g	16 cm^3	
4		480 g	64 cm^3	
5	large	750 g	100 cm^3	

Questions

1. Use the completed graph to determine how much mass a sample of galena would have if its volume was 75 cm^3

2. Use the completed graph to determine how much volume a sample of galena would have if it's mass was 300 g.

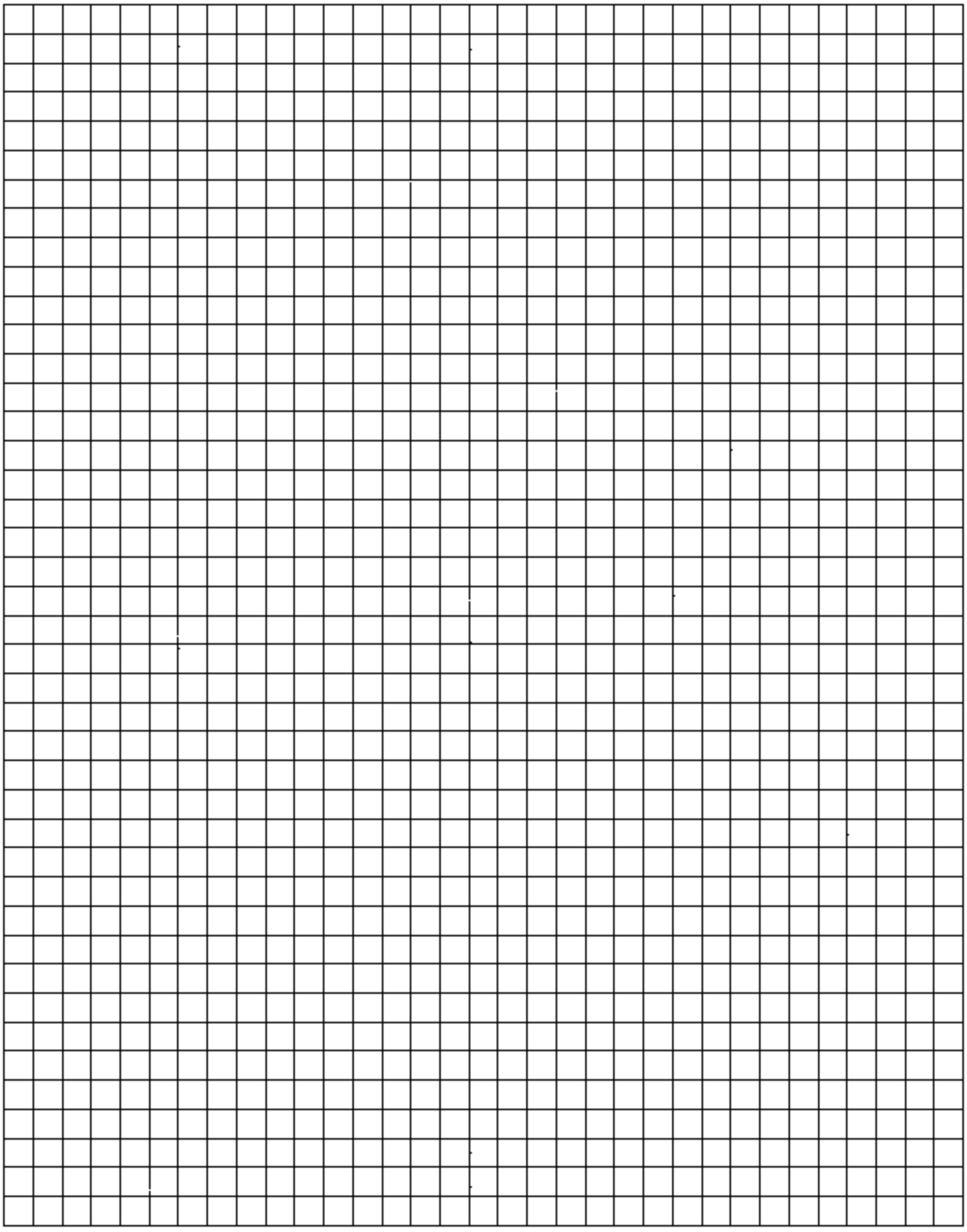
3. Describe the relationship between mass and volume shown by the graph.

4. How does the density of Sample 2 compare to that of Sample 4?

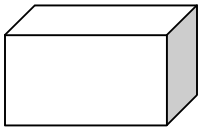
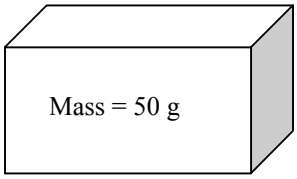
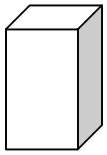
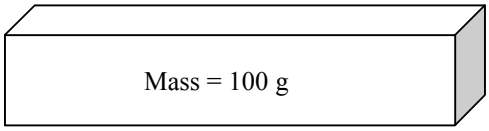
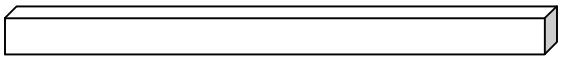
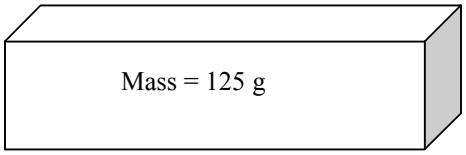
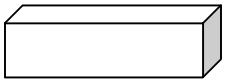
5. How did the density of the largest sample (5) compare to the smallest sample (1)?

6. What is the effect of sample size on the density of a material?

7. Describe the trick you were taught on how to change around the density formula to solve for different parts of it.



Density Problems Part II: Calculate the density of the following different sized blocks. Do not forget to include units! Recall: **Volume = Length x Width x Height**. Blocks are drawn to scale!

1	Mass = 10 g 	**5**	Mass = 40 g 
	Density =		Density =
2		**6**	Mass = 30 g 
	Density =		Density =
3		**7**	Mass = 30 g 
	Density =		Density =
4		**8**	Mass = 50 g 
	Density =		Density =

Density Graphing Part II: For each sample, use the data below to: 1) determine the density, 2) determine if the object will sink or float, 3) plot the objects mass versus volume on the graph paper. Note: the graphed line is that object density! **YOU WILL HAVE 5 DIFFERENT LINES ON THE SAME GRAPH! YOU MUST LABEL EACH ONE**

Object A	**Sample 1**	**Sample 2**	**Sample 3**	**Sample 4**	**Density (g/ cm^3)**	**Sink or float?**
Mass (g)	2	4	8	16	0.5 g/cm^3	FLOAT
Volume (cm^3)	4	8	16	32		
Object B						
Mass (g)	3	6	12	24		
Volume (cm^3)	4	8	16	32		
Object C						
Mass (g)	1	2	3	4		
Volume (cm^3)	1	2	3	4		
Object D						
Mass (g)	2	4	8	16		
Volume (cm^3)	1	2	4	8		
Object E						
Mass (g)	4	8	16	32		
Volume (cm^3)	1	2	4	8		

Recall: the density of water is 1.0 g/cm^3

A density greater then 1.0 sinks in water, while a density less then 1.0 floats