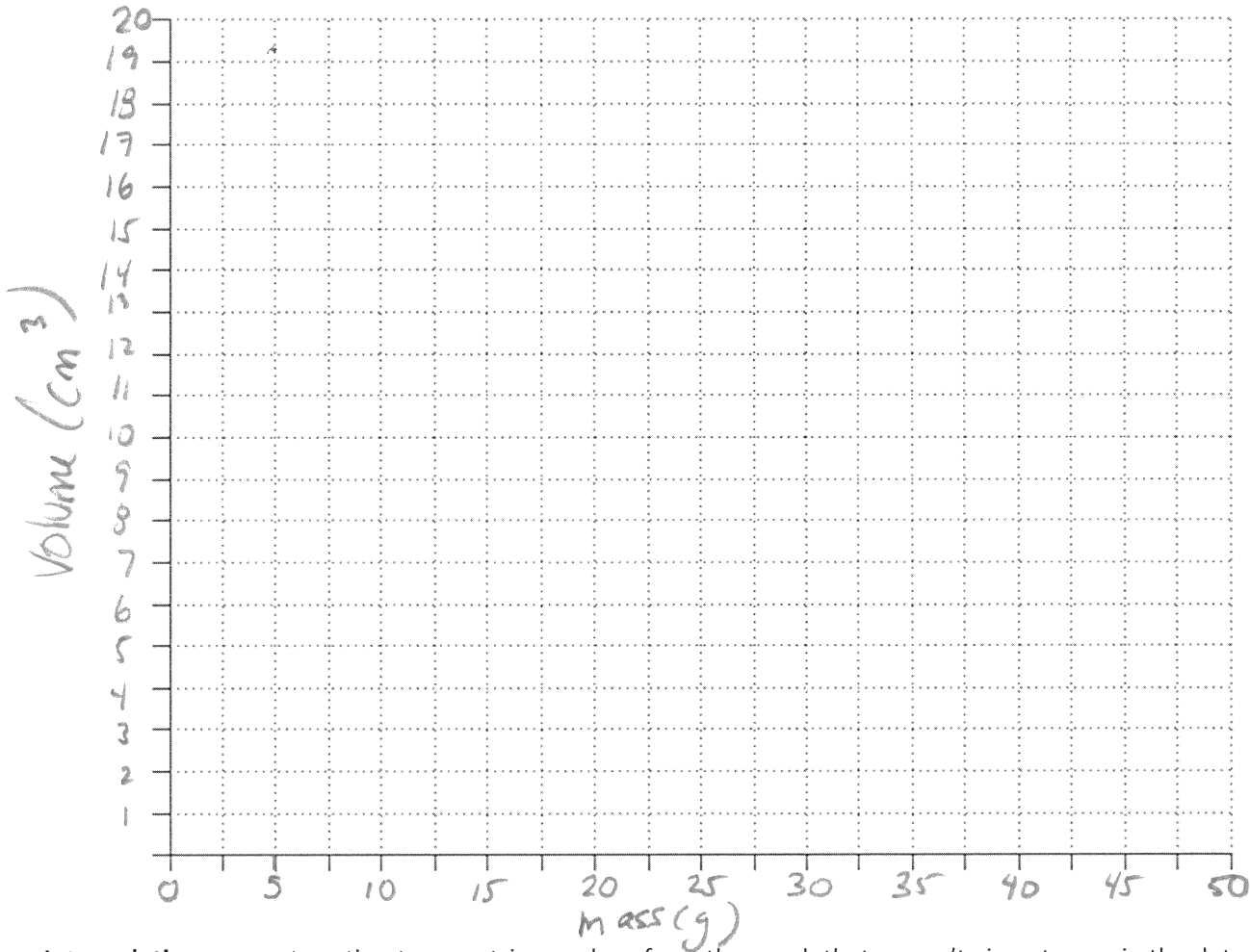


NAME: _____ BLOCK: _____

USING GRAPHS IN SCIENCE

The numbers to the right represent 4 samples of granite. Use the following data to construct a graph. Be sure to put mass on the vertical axis and volume on the horizontal axis. Line graphs like this allow one to infer values between or outside the range of data given. Make sure you leave room on each axis to predict data that is either above or below the values given to you for mass and volume (hint: you may want to start with a value of 0!)

Mass (g)	Volume (cm ³)
8.1	3.0
15.4	5.7
24.0	8.9
40.5	15.0



Interpolation means to estimate, or retrieve values from the graph that weren't given to you in the data table itself.

- 1.) Interpolate the **volume** of a sample of granite with a mass of 20 grams. _____ (include units)

Extrapolation means to estimate values from the graph by extending your graph line/follow the trend for values that were not given to you in the data table

- 2.) Extrapolate the volume of a piece of granite with a mass of 50 g. _____ (include units)
- 3.) Extrapolate the mass of a 17 cm³ piece of granite. _____ (include units)

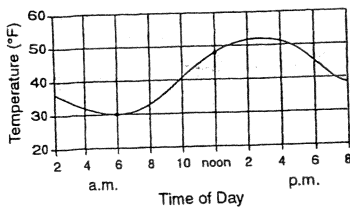
Set 1 — Rate of Change

The temperature of water in a container was 60°C . Ten minutes later, the water temperature was 35°C . What was the rate of cooling of the water?

- (1) $25^{\circ}\text{C}/\text{min}$
- (2) $2.5^{\circ}\text{C}/\text{min}$
- (3) $35^{\circ}\text{C}/\text{min}$
- (4) $3.5^{\circ}\text{C}/\text{min}$

1 _____

The graph below shows temperature readings for a day in April. The average rate of temperature change, in Fahrenheit degrees per hour, between 6 a.m. and noon was



- (1) $6^{\circ}\text{F}/\text{hr}$
- (2) $8^{\circ}\text{F}/\text{hr}$
- (3) $3^{\circ}\text{F}/\text{hr}$
- (4) $18^{\circ}\text{F}/\text{hr}$

2 _____

3. The rate of temperature change for the water in cup A for the first 10 minutes was approximately

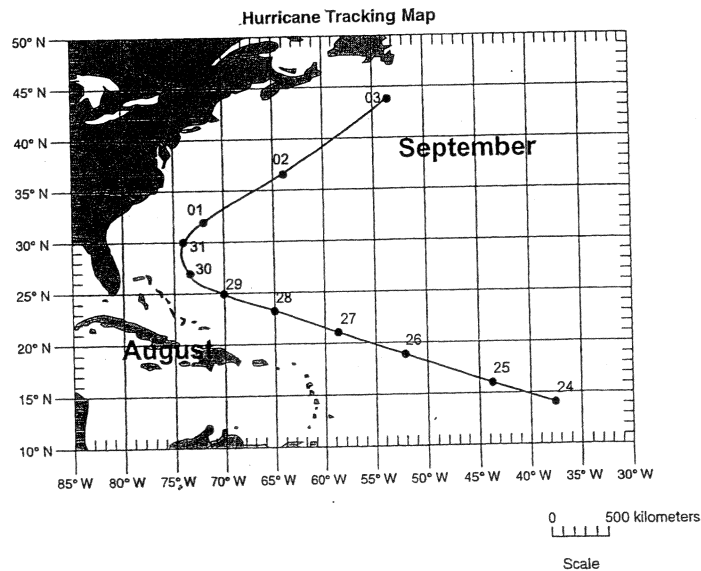
Minute	Temperature of Water ($^{\circ}\text{C}$)	
	Cup A	Cup B
0	90	20
1	88	20
2	86	20
3	85	21
4	83	21
5	82	22
6	81	22
7	80	22
8	79	22
9	78	23
10	77	23

- (1) $0.77^{\circ}\text{C}/\text{min}$
- (2) $1.3^{\circ}\text{C}/\text{min}$
- (3) $7.7^{\circ}\text{C}/\text{min}$
- (4) $13.0^{\circ}\text{C}/\text{min}$

3 _____

4. Calculate the average daily rate of movement of the hurricane from August 24 to August 28. Follow the directions given below.

- a) Write the equation used to determine the rate of change.
- b) Substitute data into the equation.



Calculate the average daily rate of movement of hurricane and label it with the proper units.