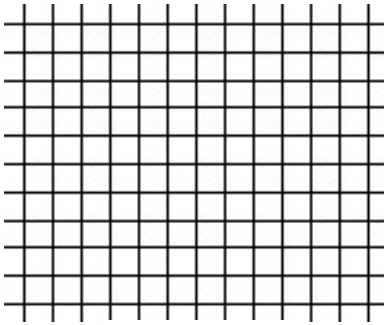
Name _____ *Date* _____ *Period* _____

TIME & RATE

Complete the data charts. Make your graphs with the time on the left vertical axis and the rate on the right vertical axis. The X axis has been labeled for you. Be sure that you graph in pencil, use the majority of the graph space, and label your lines. NOTE: Graph the time and the rate lines in DIFFERENT colors.

Exercise I: WEATHERING

Hardness	Time needed to weather 17mm of material	Rate of weathering (mm/year)
1	2 years	
2	4 years	
3	8 years	
4	16 years	
5	32 years	
6	64 years	
7	128 years	
8	256 years	



Hardness

1. Which hardness takes the longest time to weather?

2. Which hardness has the fastest weathering rate?

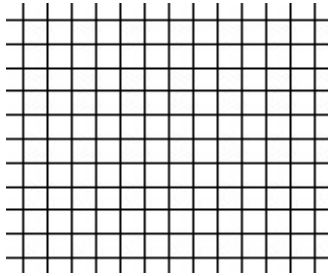
3. How does the rate of weathering change as hardness increases?

4. How does the time needed for weathering change as hardness increases?

5. Is the relationship between hardness and weathering time direct or inverse?

Exercise II: UGLINESS

Ugliness of cat	Time for a mouse to run 14 feet	Mouse's rate of running (feet/sec)
Cute	6.3 sec.	
Medium	4.7 sec.	
Ugly	3.2 sec.	
Deformed	1.6 sec.	
Ugly enough to stop time	. 4 sec.	



Ugliness

1. Which "ugliness" takes the longest time to run away from?

2. Which "ugliness" makes the mouse run at the fastest rate?

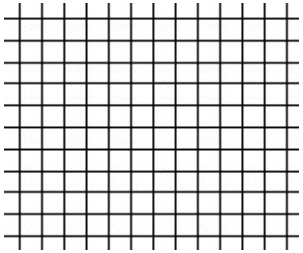
3. How does the rate of running change as the "ugliness" increases?

4. How does the time needed to run away change as "ugliness" increases?

5. Is the relationship between "ugliness" and time to run direct or inverse?

Exercise III: DENSITY

Density	Time to settle 74cm	Settling Rate (cm/sec)
1.1 g/cm^3	13.8 sec	
1.3 g/cm^3	8.6 sec	
1.5 g/cm^3	4.7 sec	
1.7 g/cm^3	2.1 sec	
1.9 g/cm^3	.8 sec	



Density

1. Which density takes the longest time to settle?

2. Which density has the slowest settling rate?

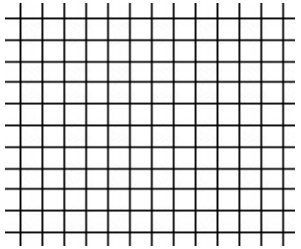
3. How does the rate of settling change as density decreases?

4. How does the time needed for settling change as density increases?

5. Is the relationship between density and settling time direct or inverse?

Exercise IV: THE HUMAN CANNONBALL

Weight	Time to fly 112ft.	Rate of flight (ft/sec)
75 lbs.	.9 sec.	
100 lbs.	1.0 sec.	
125 lbs.	1.1sec	
150 lbs.	1.2 sec	
175 lbs.	1.3 sec.	
200 lbs.	1.4 sec.	



Weight

1. Which weight takes the longest time to fly the distance?

2. Which weight has the slowest flying rate?

3. How does the rate of flying change as weight decreases?

4. How does the time needed for flying change as weight increases?

5. Is the relationship between weight and flying time direct or inverse?