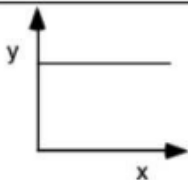
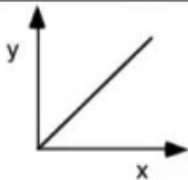
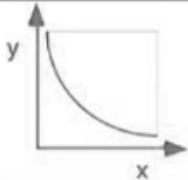
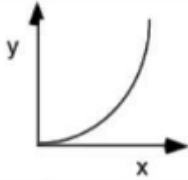
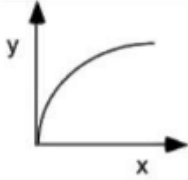
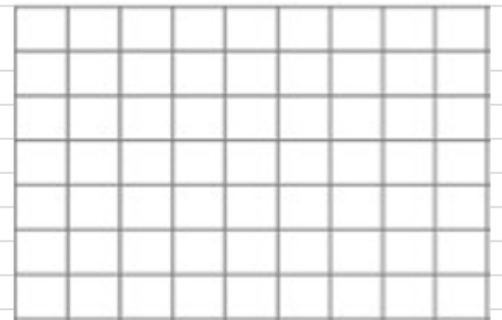
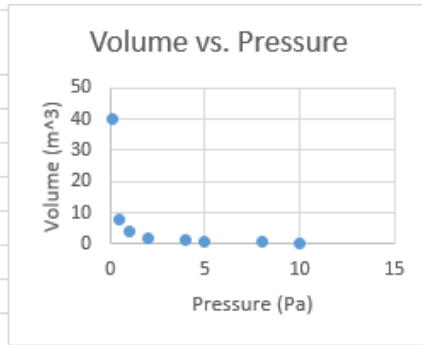


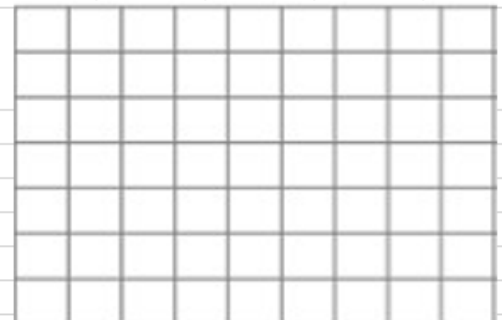
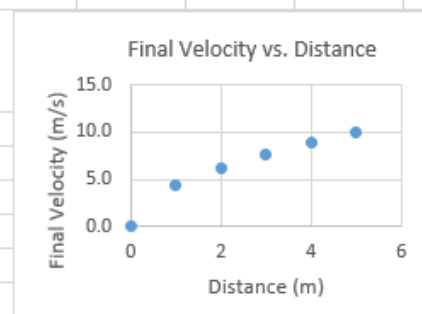
Graph shape	Written relationship	Modification required to linearize graph	Algebraic representation
	As x increases, y remains the same. There is no relationship between the variables.	None	$y = b$ , or y is constant
	As x increases, y increases proportionally. Y is directly proportional to x.	None	$y = mx + b$
	As x increases, y decreases. Y is inversely proportional to x.	Graph y vs $\frac{1}{x}$ , or y vs $x^{-1}$	$y = m\left(\frac{1}{x}\right) + b$
	Y is proportional to the square of x.	Graph y vs $x^2$	$y = mx^2 + b$
	The square of y is proportional to x.	Graph $y^2$ vs x	$y^2 = mx + b$

Practice:

V(m <sup>3</sup> )	P(Pa)	
0.1	40	
0.5	8	
1	4	
2	2	
4	1	
5	0.8	
8	0.5	
10	0.4	



Distance (m)	Final Velocity (m/s)	
0	0.0	
1	4.4	
2	6.3	
3	7.7	
4	8.9	
5	9.9	



**Lab:** Spring, String, and Cart

**Purpose:** How does the distance a spring is pulled effect the final kinetic energy of a cart? (don't re-copy this)

**Data:** This will be a table of ONLY the measurements you took (distance pulled and final velocity)

Distance pulled	Velocity

**Calculations:** This is where the majority of the work will be

New table with calculate columns. YOU MUST SHOW HOW CALUATIONS WERE MADE AND EQUATIONS USED!!!!

Distance pulled	Velocity	KE	STRAIGHTENED COLUMN

Graph the following

- 1) KE (y) vs. Distance Pulled (x)
- 2) Straightened Graph...find the slope and determine the Y-intercept (it should not be zero)

**Conclusion:**

- 1) Error analysis
- 2) Discuss the meaning of the slope...what does it represent (DON'T SAY HOW STEEP or anything like that)...think in terms of the equation
- 3) Discuss the meaning of the y-intercept...think conservation of energy (the energy has to go somewhere)

**Extra Questions:**

- 1) Screen shot and CROP your two practice problems from page one.
- 2) Sketch (DO NOT ACTUALLY GRAPH THE NUMBERS) of what the distance pulled vs. velocity graph would look like...what would its slope be symbolically