EXTRA PRACTICE -- Graphing

1. ROUNDING

To practice rounding values obtained from your scale calculations (step 4), use the following tables containing typical answers you might get when calculating the scale (or correct value for a 1 cm square) on an axis. Choose the appropriate scale for each of the calculated values. Remember that the rounded-up values must be a 1, a 2, or a 5, or some multiple thereof (0.1, 0.2, 0.5, 10, 20, 50, 100, 200, 500, etc.)

	Calculated Value	Chosen Scale
1	1.8	
2	0.8	
3	4.5	
4	5.6	
5	11.2	
6	2.1	
7	5500	
8	0.09	
9	0.045	
10	1.48	

	Calculated Value	Chosen Scale
11	40.5	
12	65	
13	50.3	
14	330	
15	92	
16	1330	
17	0.15	
18	0.011	
19	0.065	
20	249	

2. CALCULALTING SCALES: Part 1

Now let's practice calculating scales. The following table shows the voltage to current data of a Model SKH-333 arc welder needed to plot a Voltage vs Current graph.

Current (amperes)	Voltage (volts)
100	62
200	55
300	47
400	37
500	25
600	10

Before calculating the scales, pick the correct measurements for each axis.
_____ goes on the horizontal axis and _____ goes on the vertical axis.

In the space provided write out the formula to be used and then do the scale calculation for the **horizontal axis.**

In the space provided write out the formula to be used and then do the scale calculation for the **vertical axis.**

3. CALCULATING SCALES: Part 2

The following tables of values are to be used to practice calculating the correct scales for the appropriate axes. PLEASE DO NOT PLOT ANY GRAPHS. When doing your calculations you must **show the formulas** and **name the variable for the appropriate axis**.

A)

Distance vs Time	distance (m)	2.5	6.5	15.0	28.0
	time (s)	0.1	0.2	0.3	0.4

B)

Length vs Volume	volume(m^3)	100	500	1000	1320
	length(m)	2.8	9.6	15	18

C)

Length vs. Time	length (cm)	5	20	60	100
	time (s)	265	159	53	13

D)

Speed vs Time	time (s)	19.5	2.0	8.0	37.0
	speed (m/s)	50	100	80	20

E)

Mass vs. Volume	mass (g)	0	100	200	300	400
	volume (mL)	0	40	80	120	160

4. GRAPHING PRACTICE

Create proper scientific graphs for the following sets of data on the graph paper provided.

A) Plot a graph of Height vs. Age for the growth of an average human male.

Height (m)	Age (years)
0.45	0
0.65	1
0.88	2
1.08	4
1.18	6
1.23	8
1.33	10
1.39	12
1.54	14
1.75	16
1.85	18
1.90	20
1.90	22
1.90	24

B) Plot a graph of Volume of Air Space vs Volume of Sand.

Volume of Sand (cm^3)	Volume of Air Space (cm^3)
0.0	0.0
31.5	11.5
36.8	13.4
41.5	15.1
49.8	18.5
55.7	20.8
64.4	23.5
69.7	25.4
74.5	26.2
79.8	29.1
85.6	31.2
97.5	35.6