Introduction to Physics Graphing

Graphing - Steps

1. Determine which variable is on the x-axis and which variable is on the y-axis
2. Determine an axis scale
3. Label each axis with units
4. Plot the graph
5. Title the graph
6. Determine the type of graph

Graphing - Step 1

Determining which variable goes on the x- and y-axis.

1. Independent Variable- X-Axis
2. Dependent Variable- y- Axis

Example: in a graph of distance vs. time

X-axis: Time

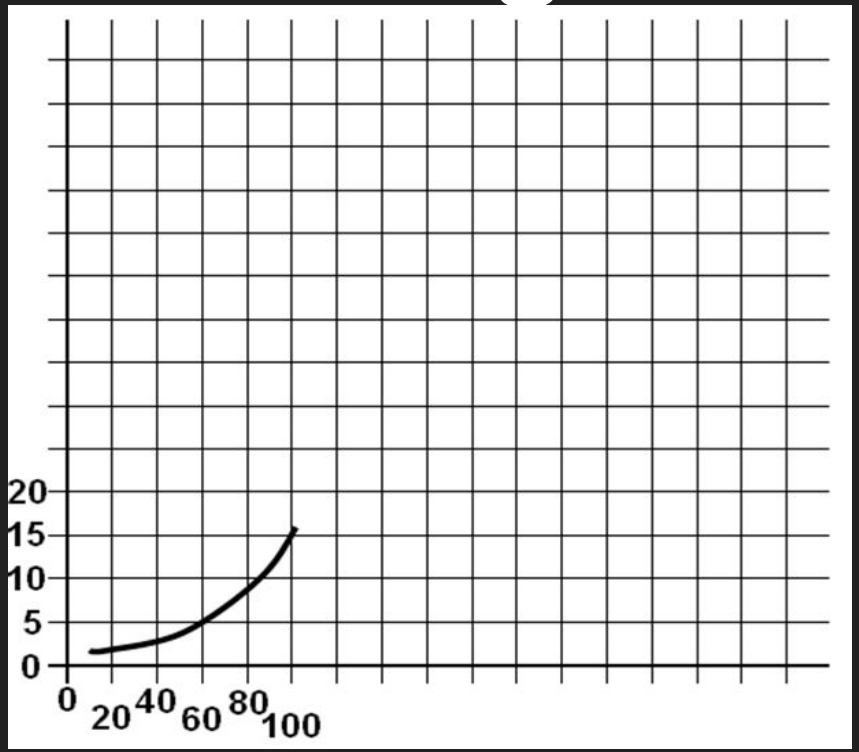
Y- Axis: Distance

Graphing- Step 2

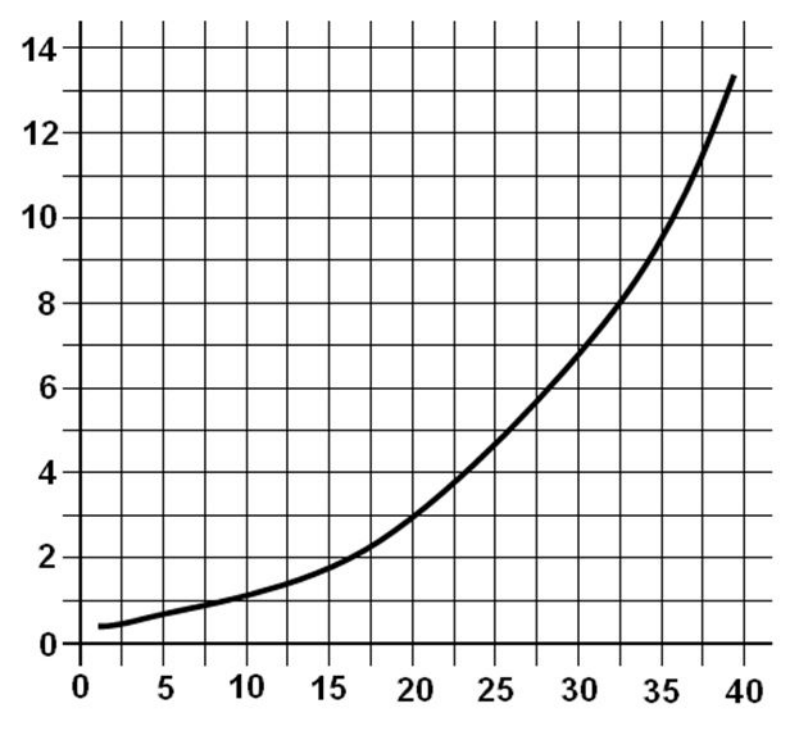
Determining an axis scale

- Try to use as much of the graph as possible without going off the edge
  - What should your scale be?
    - 1, 2, 5, 10, etc.

Bad Scale Range



Good Scale Range



Graphing - Step 3

Label each axis with units

Example for a distance vs. time graph

X-axis: time (min)

Y-axis: distance (m)

Graphing - Step 4

Plotting the Points

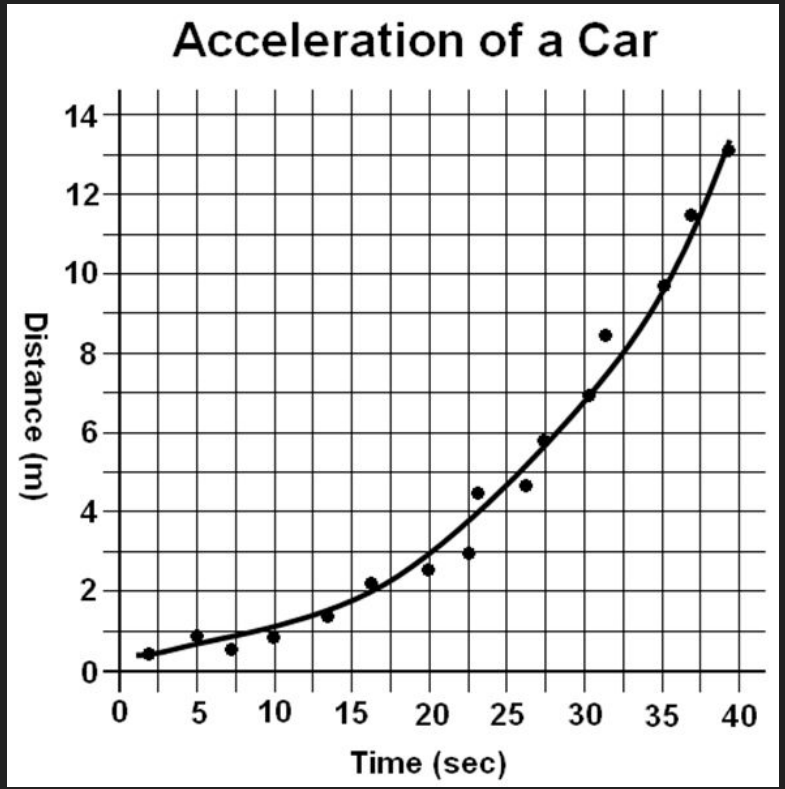
- After plotting the points, draw a line of best fit
  - Draw a line or curve that seems to be close to most of the points
  - DO NOT CONNECT THE DOTS

Graphing - Step 5

Title the graph

- What is the data of the graph trying to convey
  - For example: a distance vs. time graph may be labeled the Acceleration of a Car
- Relationship between IV and DV
- Relationship between DV and IV
- DV vs IV
- NEVER IV vs DV

Finished Product

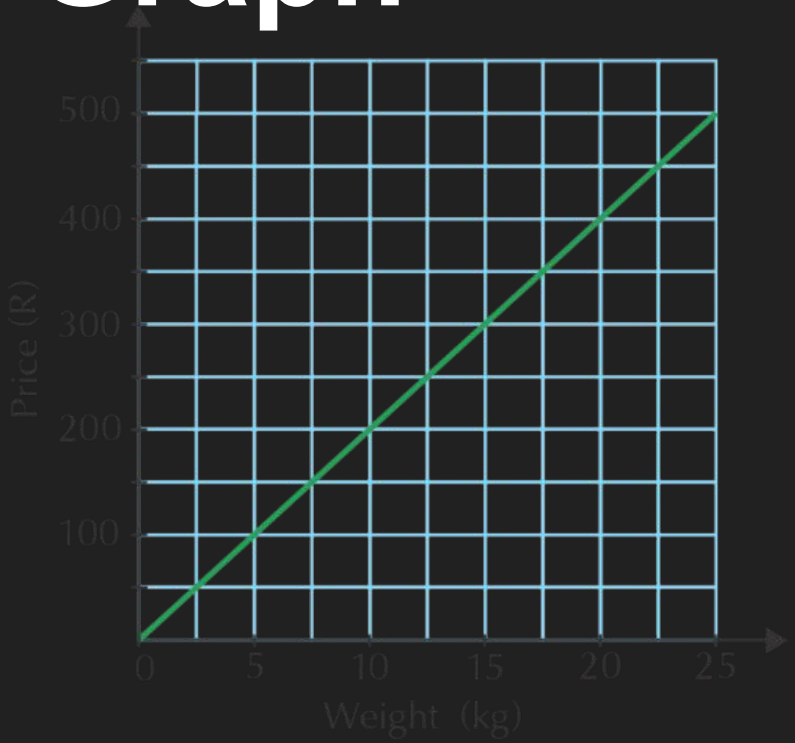


Graphing - Step 6

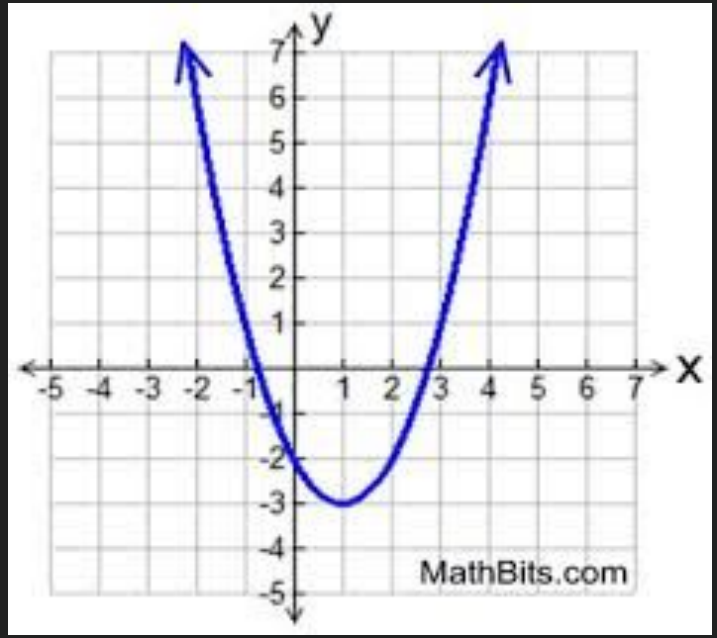
Determine the type of graph

1. Linear
2. Quadratic
3. Exponential

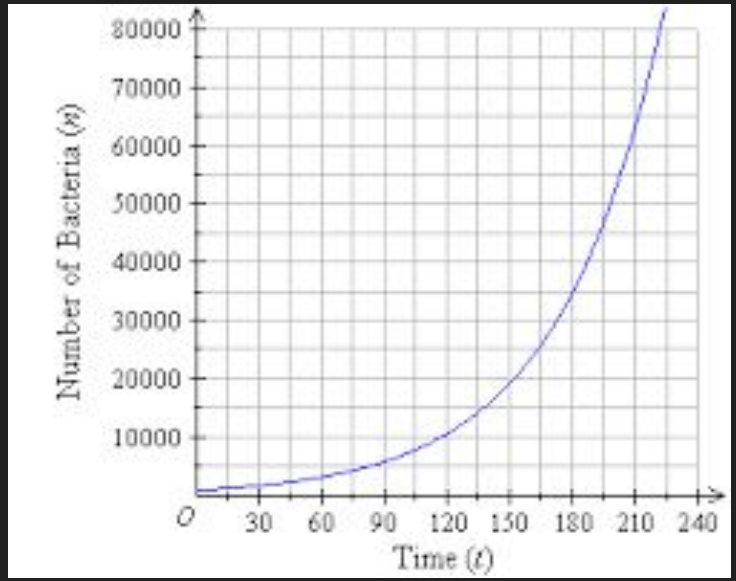
Linear Graph



Quadratic Graph



Exponential Graph



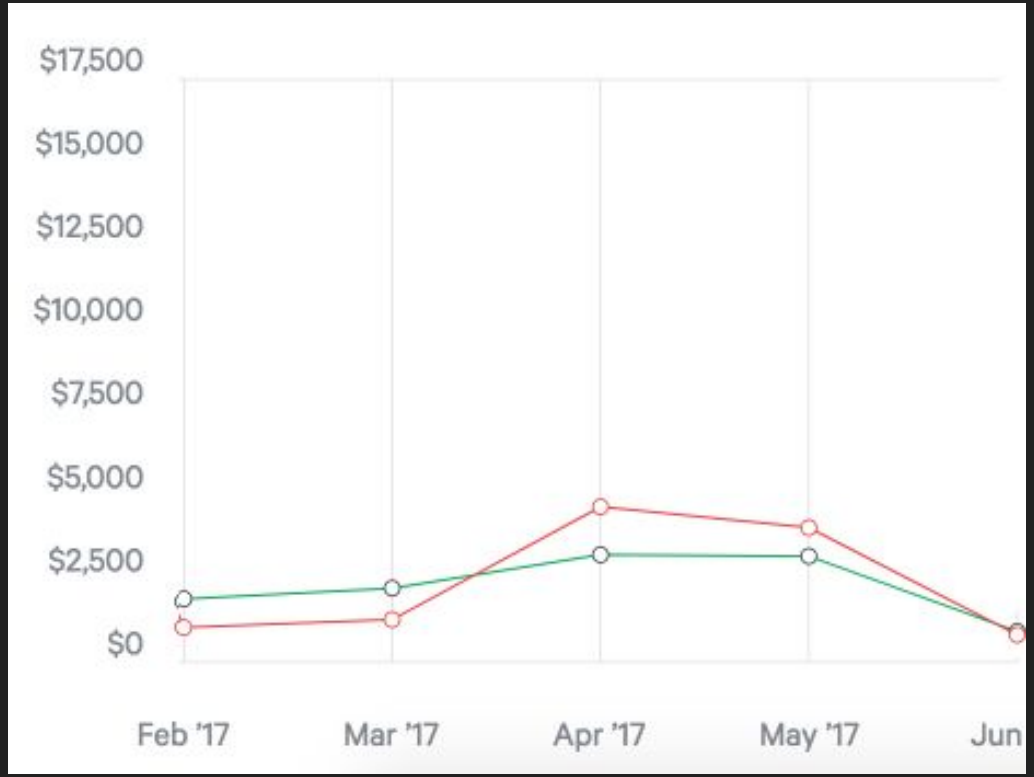
Questions:

1. Was this experiment considered a controlled experiment? Why or Why not?
2. Why is it important to take at least three trials when collecting data?
3. Draw conclusions from your graphs. Which variables affect the period of a pendulum?

Graphing Practice

Time (mins)	Distance (meters)
1	3
2	6
5	16
7	20
10	32
14	42
16	50

What's wrong with this graph?



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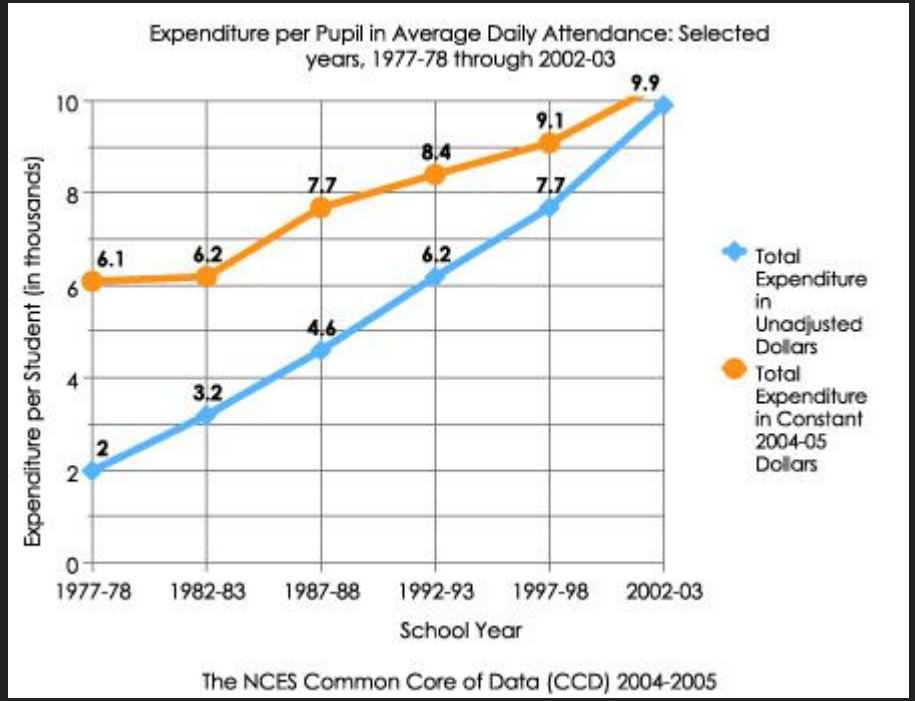

Exit Slip

- What are three components of a finished graph?