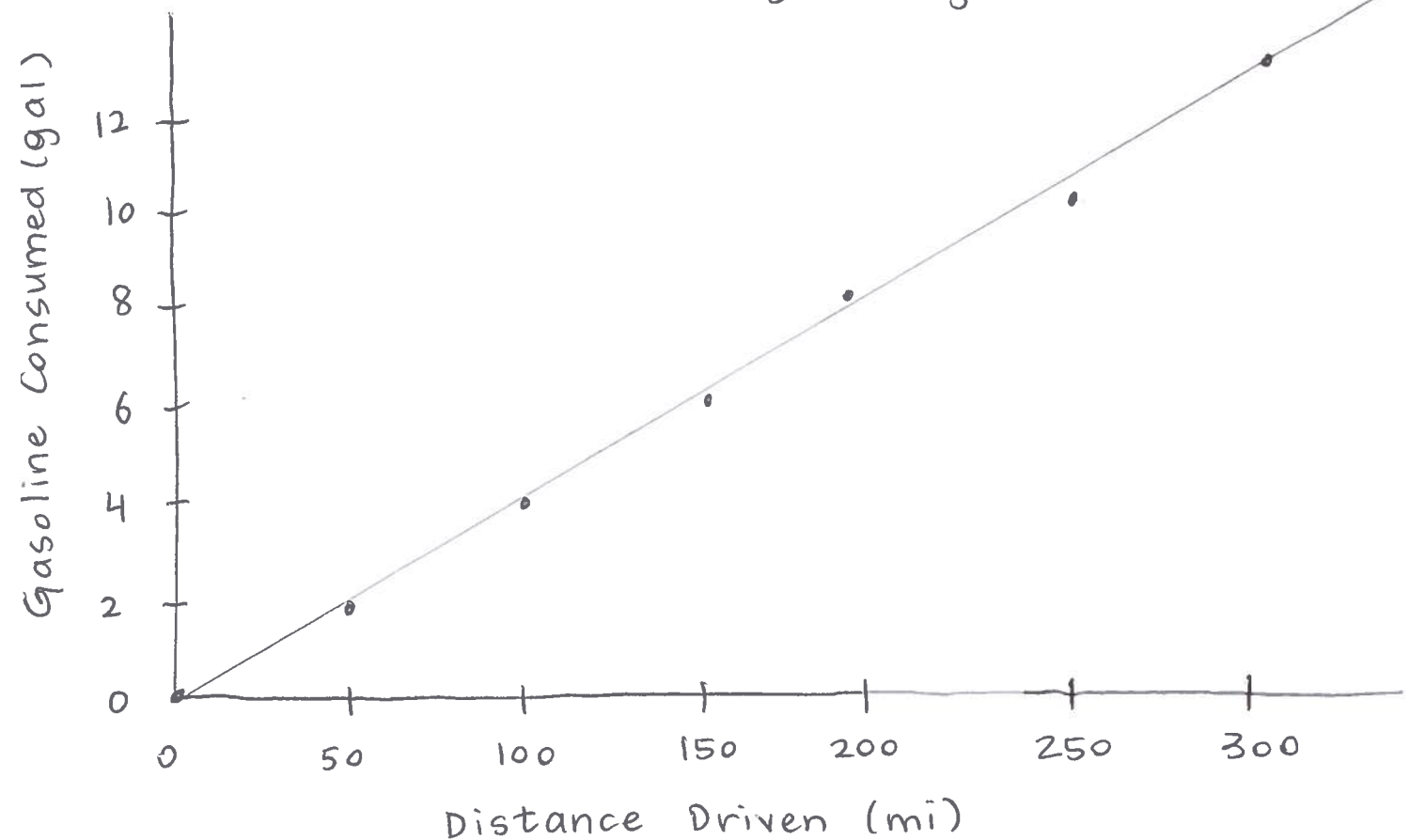


# Rules for Graphs

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- **Use graph paper or a computer program.** Failure to do so (i.e. drawing free-hand) will be worth 0 points, regardless of how nice it looks. (See example on page 2.)
- **The scale on both axes must be consistent.** In other words, for equally spaced divisions, have equally spaced numbers. (See example on page 3.)
- **Put a title on the graph.** (See example on page 4.)
- **Label both axes and include units!** (See example on page 4.)
- **Don't play connect-the-dots.** Draw or use your computer software to generate a smooth line to fit the data. (See examples on pages 5 and 9.)
- **Use the horizontal axis for the Independent Variable, and the vertical axis for the Dependent Variable.** (See example on page 6.)
- **Plot only one graph per page, and fill up the entire page!** Don't try to squish everything into a corner. Use of landscape or portrait mode are both acceptable. (See example on page 7.)
- **Don't use line mode on Excel.** (See examples on page 8 & 11.)
- **If your data isn't linear, don't use a linear fitting line.** If you don't know how to generate an accurate fitting line using your computer, draw it in by hand afterward. (See example on page 10.)

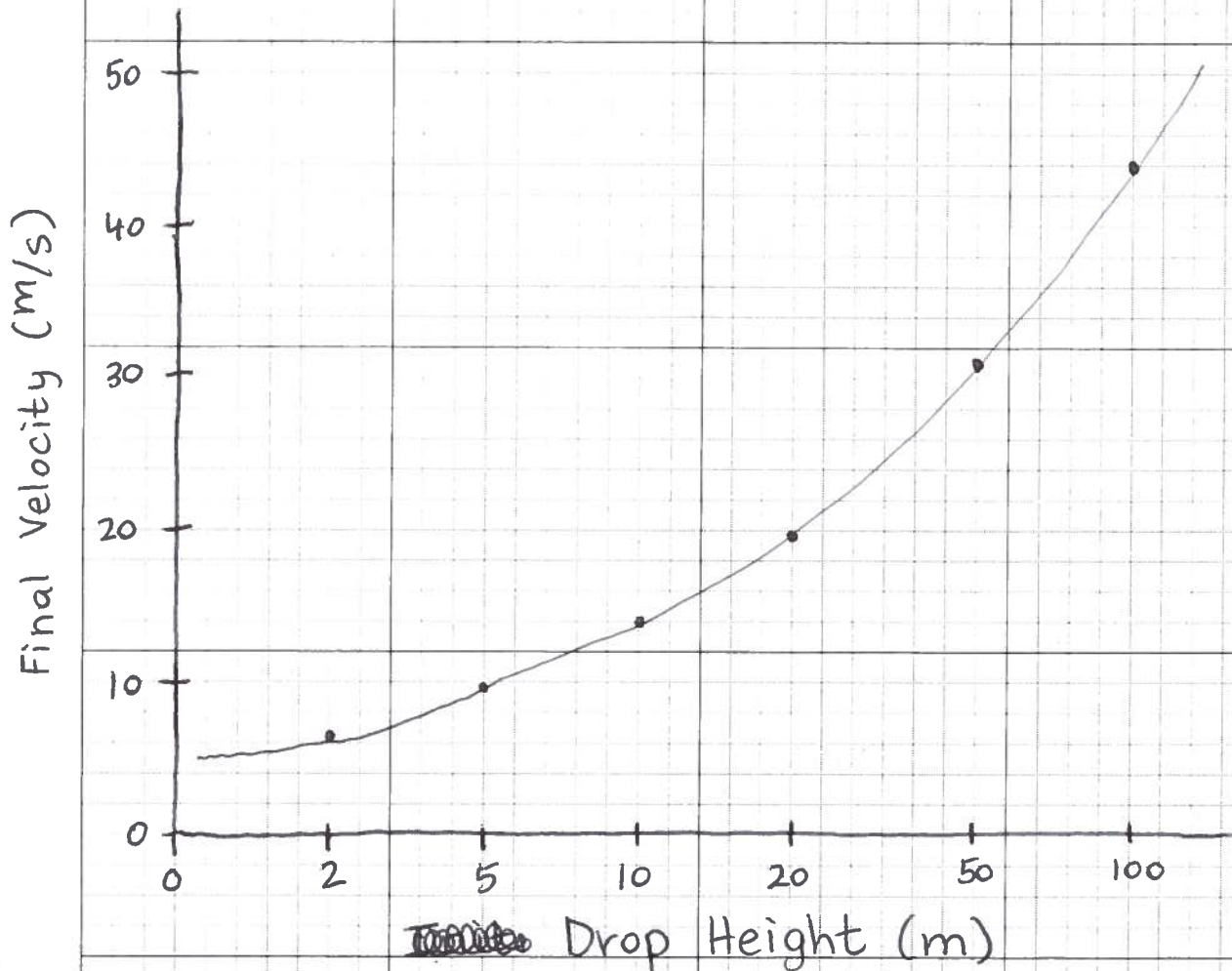
Fuel Efficiency of my Car



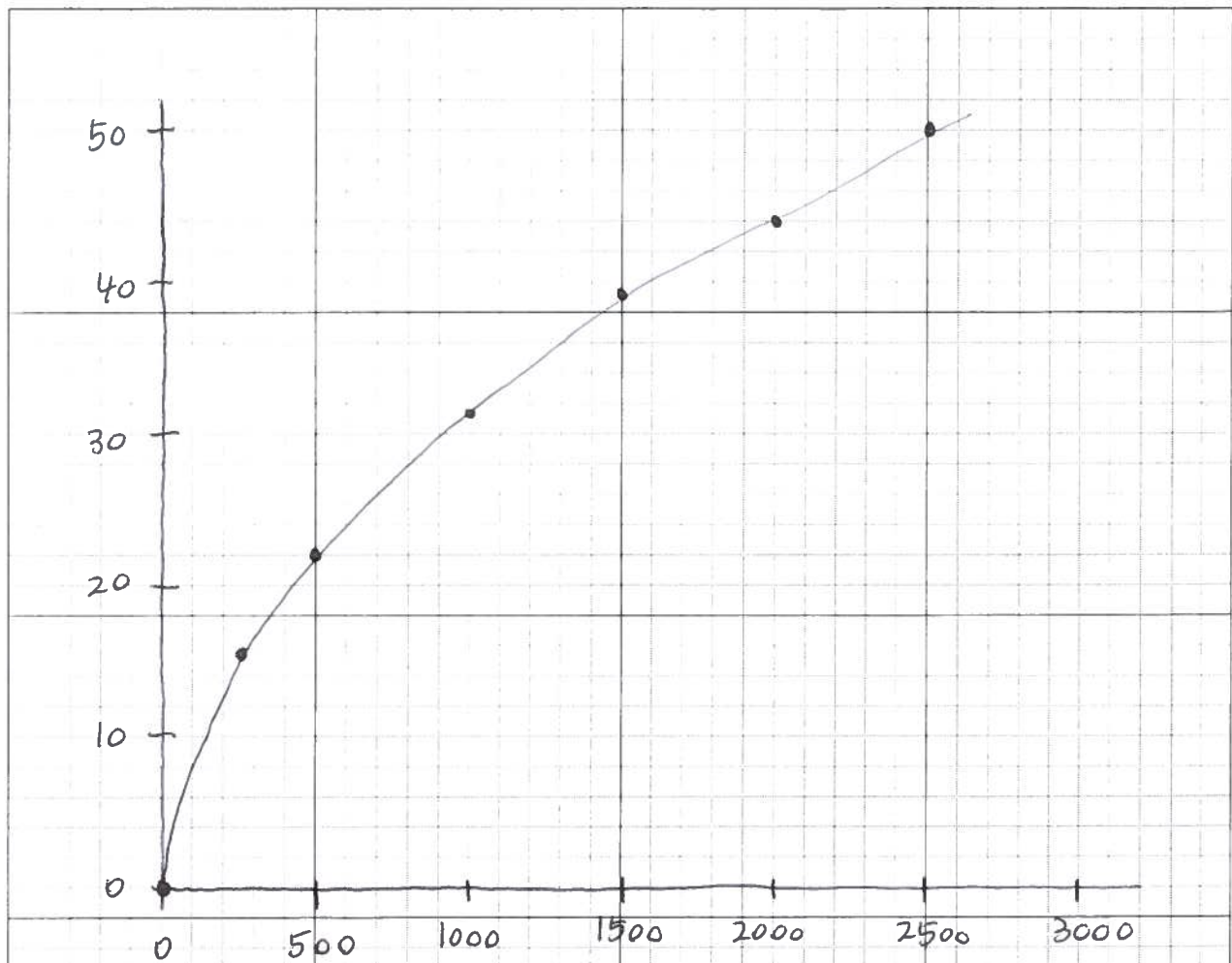
Score: Zero Points!

Why? Not on graph paper  
or generated by a  
computer program.

Speed of Bowling Ball as it hits the ground when dropped from varying heights



X-axis scale doesn't have consistent numbering!



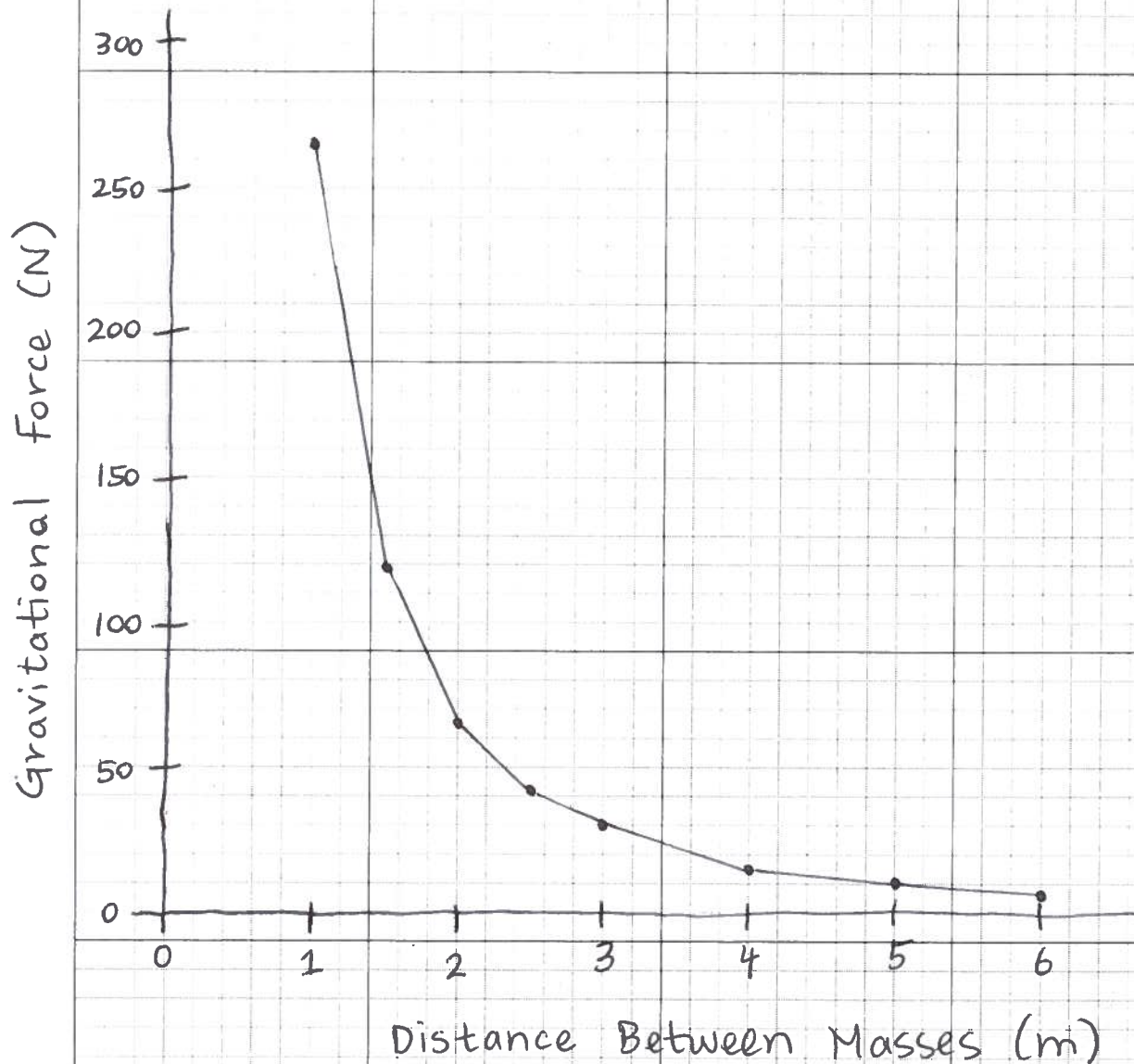
What is this a graph of?

No title

No axis labels and

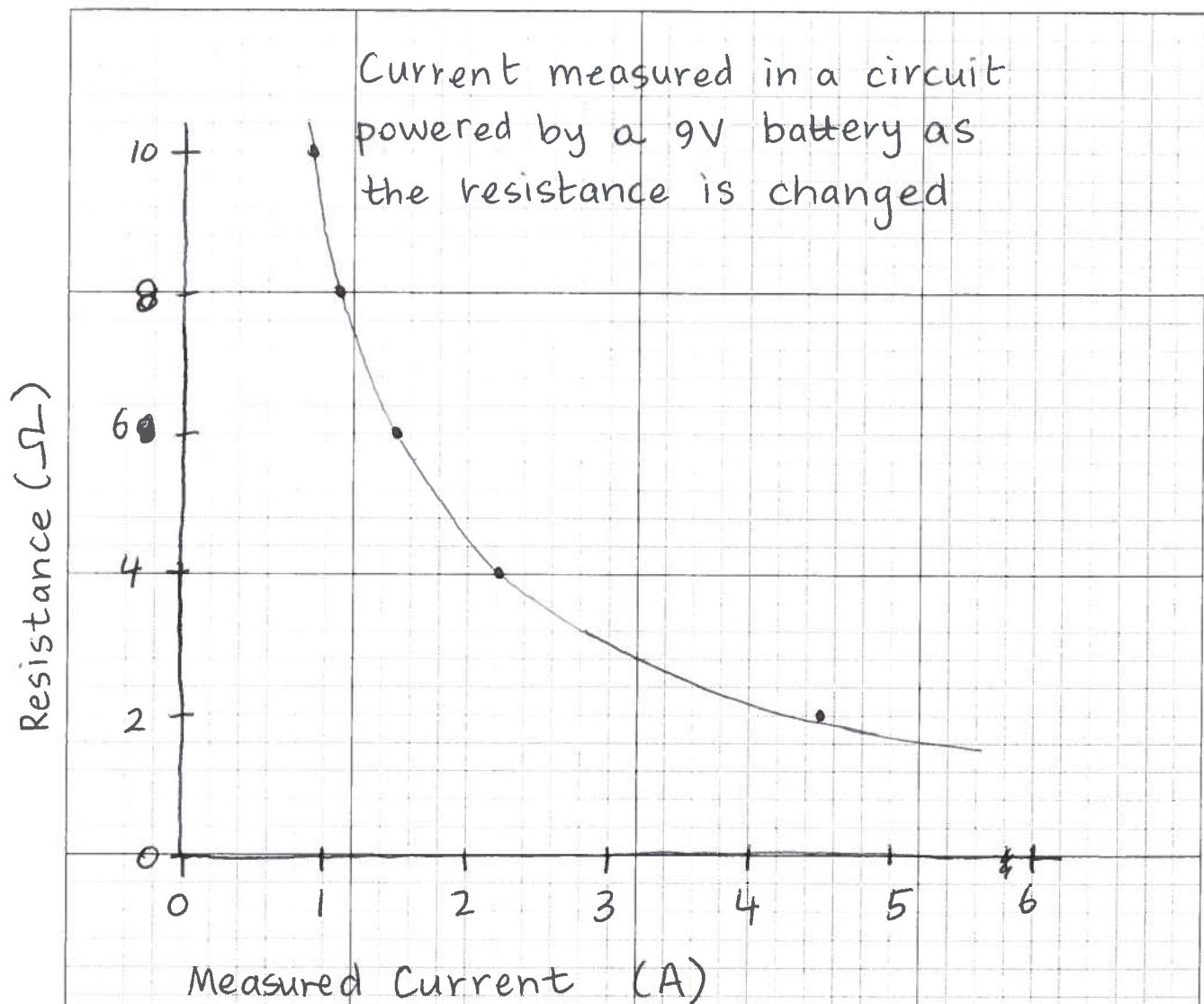
No units!

Gravitational force between two  $2 \times 10^6 \text{ kg}$  masses as the distance between them changes



Do not play  
connect-the-dots!

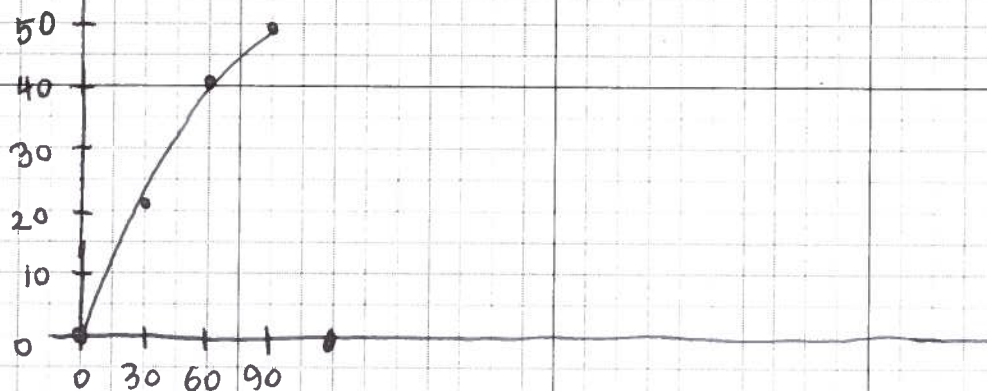




Independent Variable (resistance)  
should be on the horizontal axis!

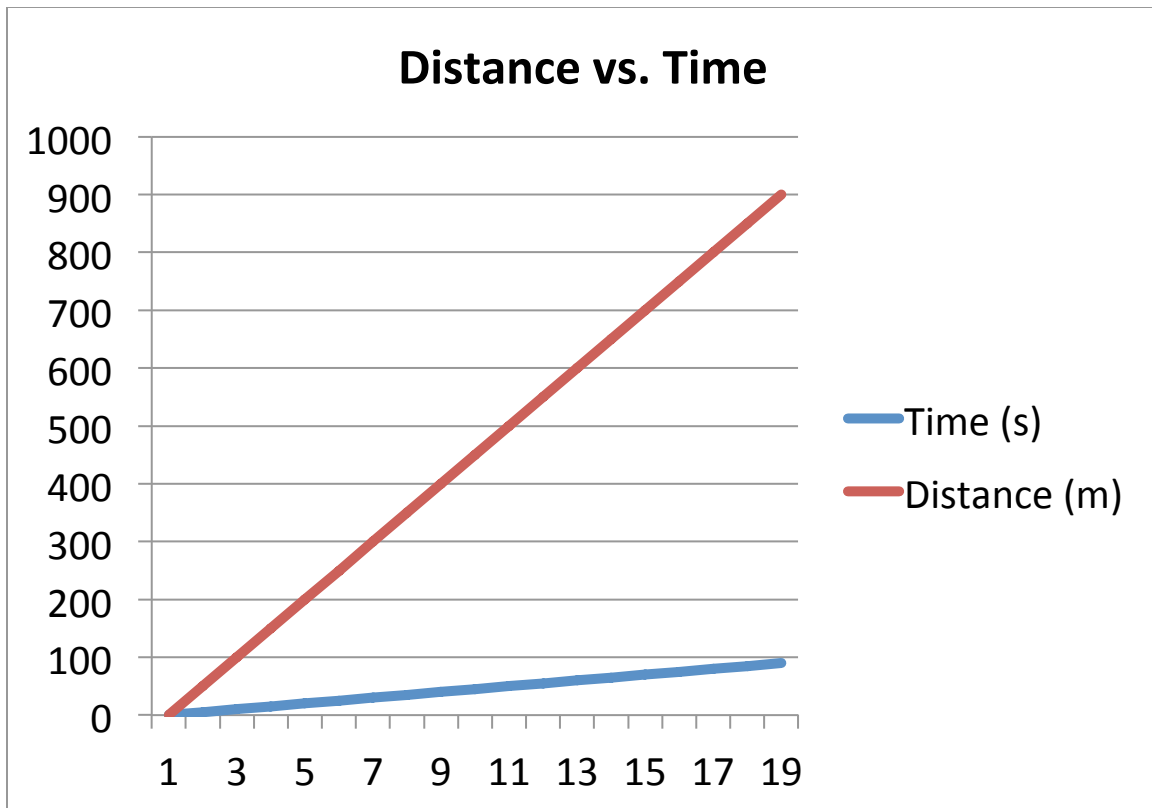
Refraction angle of light  
entering water ~~at various angles~~  
from air at various entrance angles

Refraction Angle (degrees)



Entrance Angle (degrees)

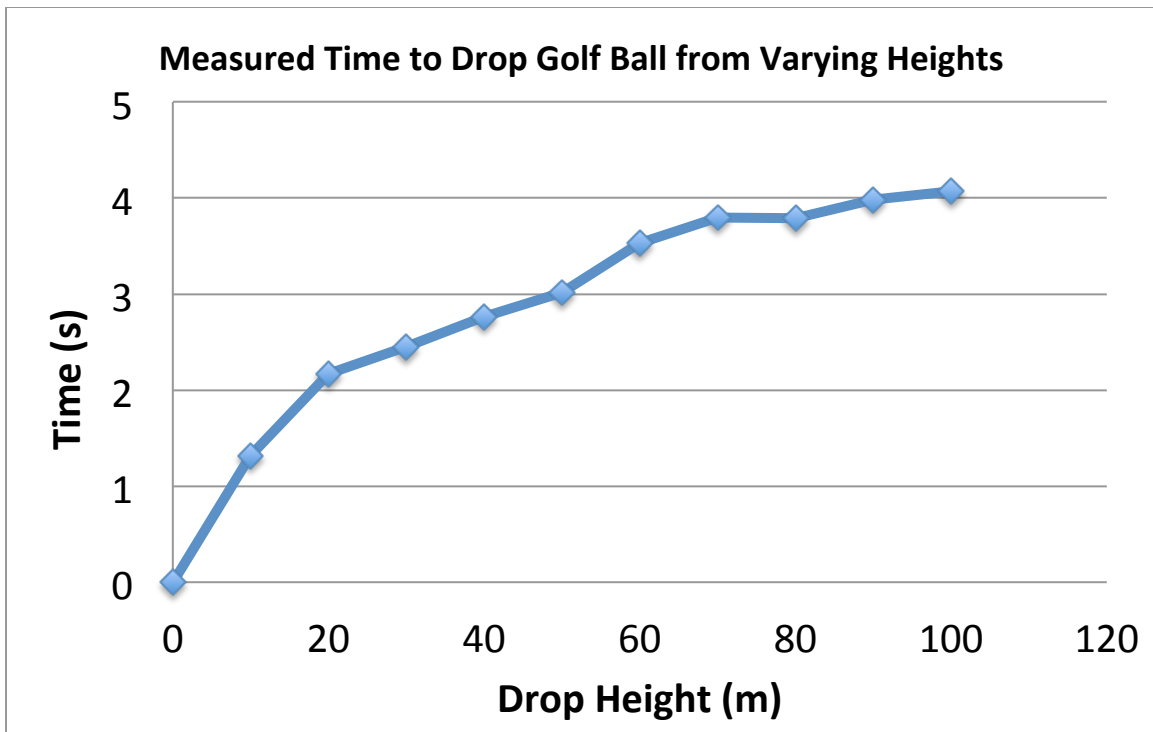
Don't squish all of  
your data into a  
small area.



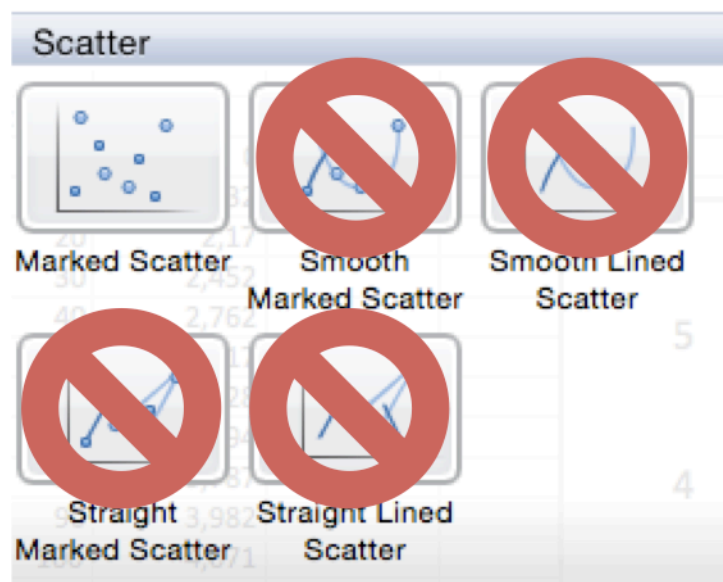
Score: 0 points!

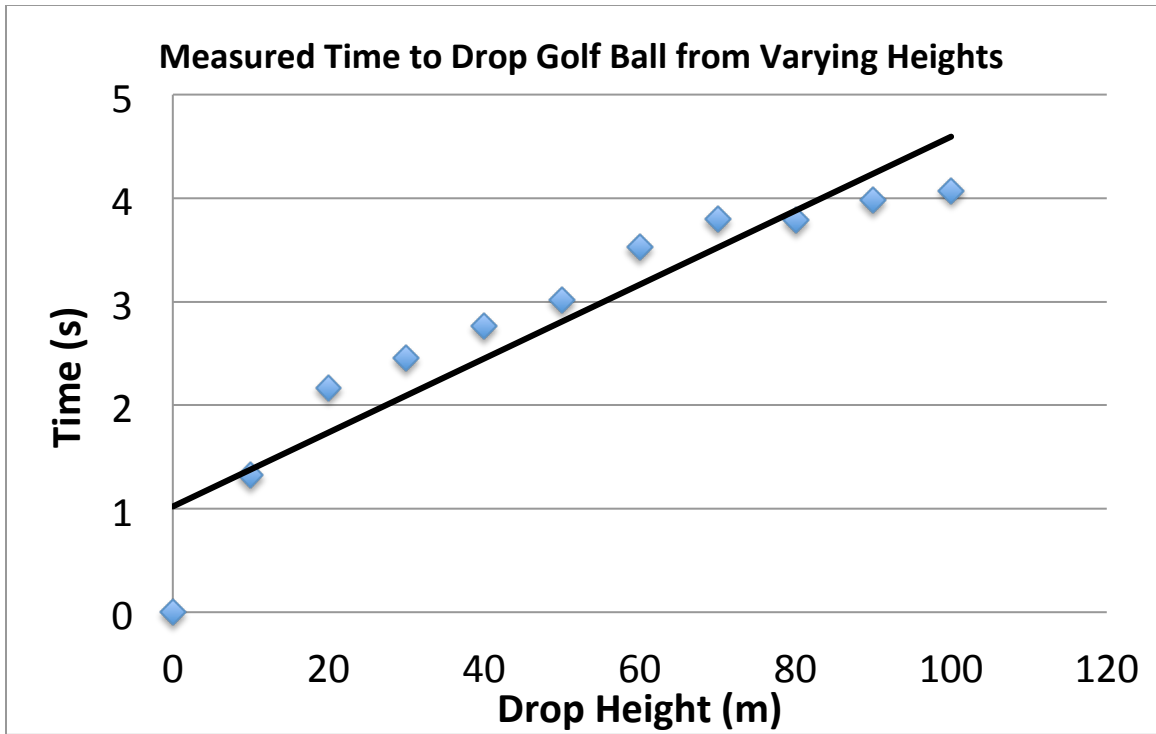
Why? This is a completely meaningless graph generated using line mode.



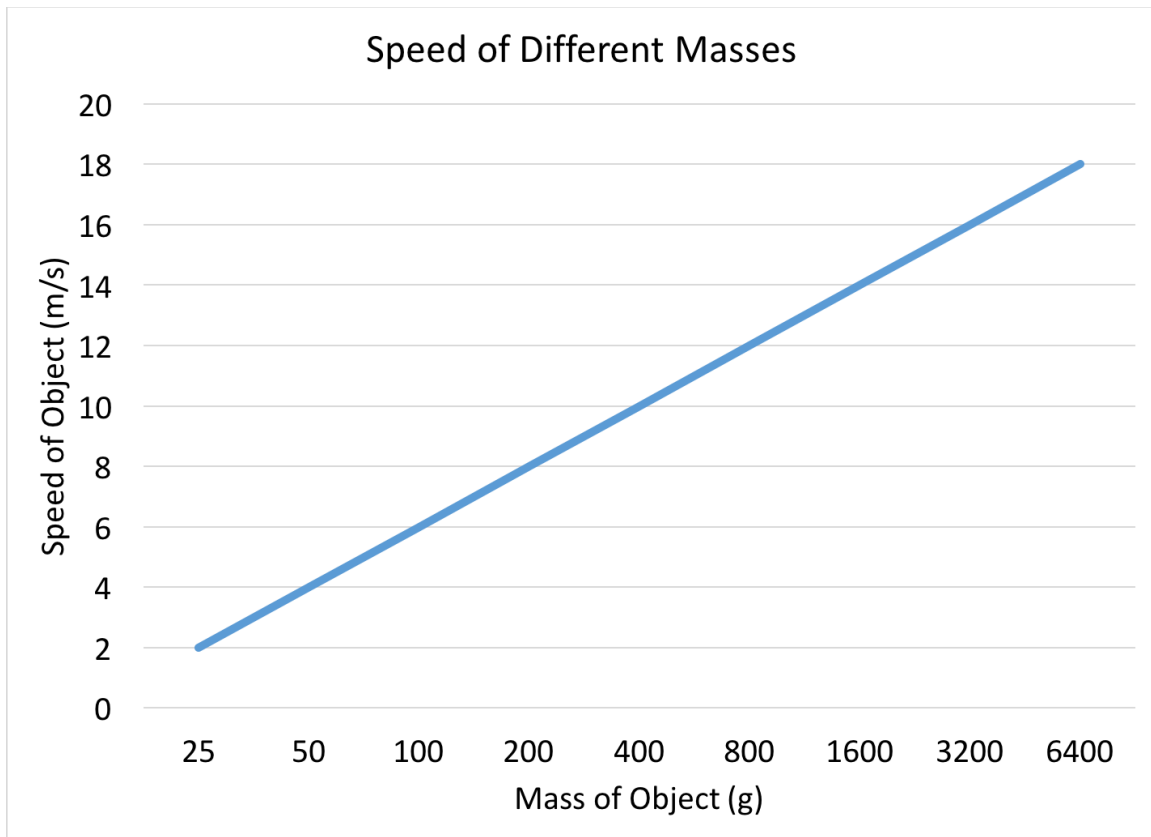


Do not play connect-the-dots in Excel: use marked scatter, not “straight” or “smooth” marked scatter





Do not use a linear fit line if the data isn't linear!



Don't use line mode to plot the data! The x-axis is not scaled properly! Make sure you use scatter mode instead.