

Electric Potential Lab Write-up

Directions. Plot and interpret the graph for:

Electric Potential vs. distance

(3 graphs, each corresponding to a different black probe placement)

Reminder. All good graphs need:

- Axis labels with units
- A title
- Data points that are not connected by lines
- A linearized graph, if the original data is not already linear
- A line of best fit through the linear/linearized data
- A visible origin

Experiment: Electric Force vs distance

Insert graph #1 here and then delete this text

Mathematical Model of data, Experiment #1

Example: $x = (60 \text{ miles/hour})t - 20 \text{ miles}$

- *Use the equation editor under “Insert” → “Equation”*
- *Use physically meaningful symbols for the independent and dependent variable.*
- **Do not** write units after variables. **Do** write units after numerical values.
- **Do not** separate the slope’s number from its units with parentheses. **Do** use parentheses to show that the slope and its units belong together.
- *Slope units = rise units / run units*
- *Y-intercept units = y-axis units*

Insert graph #2 here and then delete this text

Mathematical Model of data, Experiment #2

Insert graph #3 here and then delete this text

Mathematical Model of data, Experiment #3

Interpretation of data, Experiment #1

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*Example: The slope of the position vs. time graph is 60 miles/hour. This means that **for every one** hour of time that passes, the car moved forward in position 60 miles. The vertical axis intercept is -20 miles. This means that the car's initial position was 20 meters to the left of the reference point.*

Interpretation of data, Experiment #2

Interpretation of data, Experiment #3

Write about the similarities and differences between each of the three experiments. How did moving the black probe change your results? What stayed the same?

Given the units of your slope, what physical quantity do you think the slope represents?