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Graphing Calculator Lab

Investigating Slope-Intercept Form

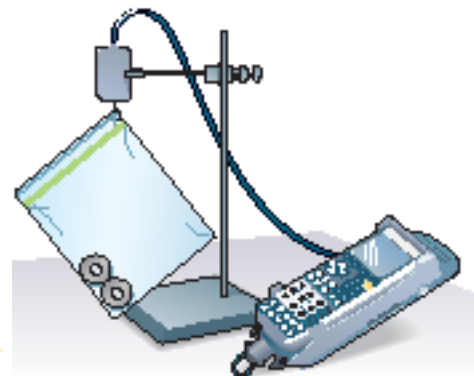
TI-73

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▶ SET UP the Lab

- Cut a small hole in a top corner of a plastic sandwich bag. Hang the bag from the end of the force sensor.
- Connect the force sensor to your data collection device.



ACTIVITY

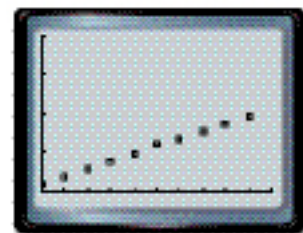
- Step 1** Use the sensor to collect the weight with 0 washers in the bag. Record the data pair in the calculator.
- Step 2** Place one washer in the plastic bag. Wait for the bag to stop swinging, then measure and record the weight.
- Step 3** Repeat the experiment, adding different numbers of washers to the bag. Each time, record the data.

ANALYZE THE RESULTS

1. The domain contains values represented by the independent variable, washers. The range contains values represented by the dependent variable, weight. Use the graphing calculator to create a scatterplot using the ordered pairs (washers, weight).
2. Write a sentence that describes the points on the graph.
3. Describe the position of the point on the graph that represents the trial with no washers in the bag.
4. The rate of change can be found by using the formula for slope.

$$\frac{\text{rise}}{\text{run}} = \frac{\text{change in weight}}{\text{change in number of washers}}$$
 Find the rate of change in the weight as more washers are added.
5. Explain how the rate of change is shown on the graph.

The graph shows sample data from a washer experiment. Describe the graph for each situation.



[0, 20] scl: 2 by [0, 1] scl: 0.25

6. A bag that hangs weighs 0.8 N when empty and increases in weight at the rate of the sample.
7. A bag that has the same weight when empty as the sample and increases in weight at a faster rate.
8. A bag that has the same weight when empty as the sample and increases in weight at a slower rate.

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