

A Stack of Cups

Your task is to represent the relationship between the size of the cups and the height of the stack of cups using a formula and a graph. Then answer the questions below about the stack of cups.

The paper cups shown below are identical and drawn full size:



a) By making measurements, represent the relationship between the number of cups and the height of the stack using a formula and a graph.

b) The graph can be drawn as a set of discrete points on a coordinate system. These points *lie along a line* and can be connected by a straight line.

- Why is the line straight?
- What are the slope and intercept of this line?
- Interpret the meaning of the slope and intercept with regard to the number and size of the cups, or parts of the cups.

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Adapted from "Paper Cups," in The New Standards Mathematics Reference Examination Practice Test High School (p. 20), Harcourt Brace Educational Measurement, University of Pittsburgh and the National Center on Education and the Economy,