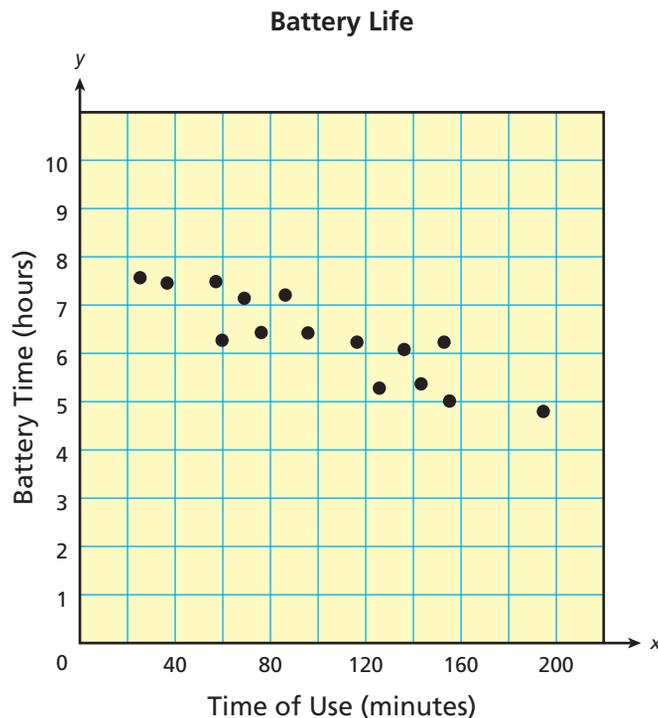


K-PREP
Sample Items
2012

Mathematics Grade 8

1

An electronics manufacturer tested the battery life of new cell phones. The scatter plot shows the time, in hours, the battery lasts (y) based on the number of minutes the phone is used (x) for each of fifteen cell phones.



Part A Which equation below would be better as the line of best fit? Explain your thinking.

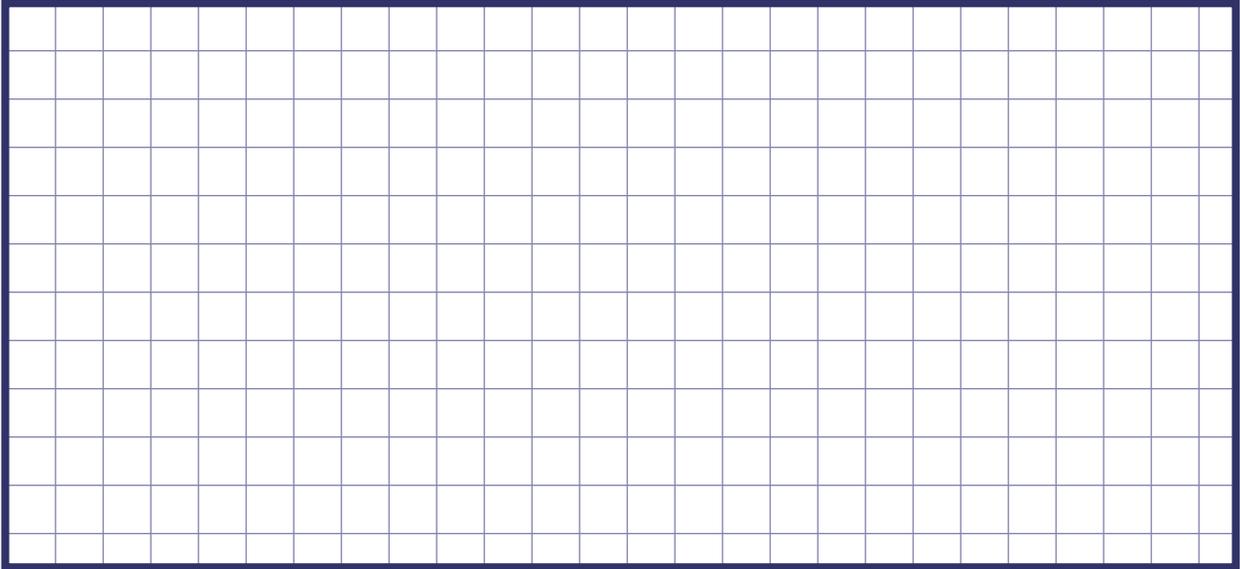
$$y = \left(-\frac{1}{100}\right)x + 7$$

$$y = \left(-\frac{3}{200}\right)x + 8$$

Part B Explain what the slope represents in this situation.

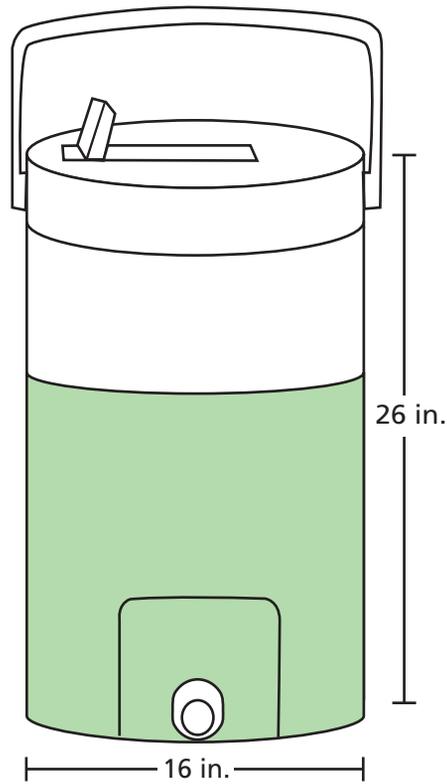
Mathematics

Do not write outside this box.



2

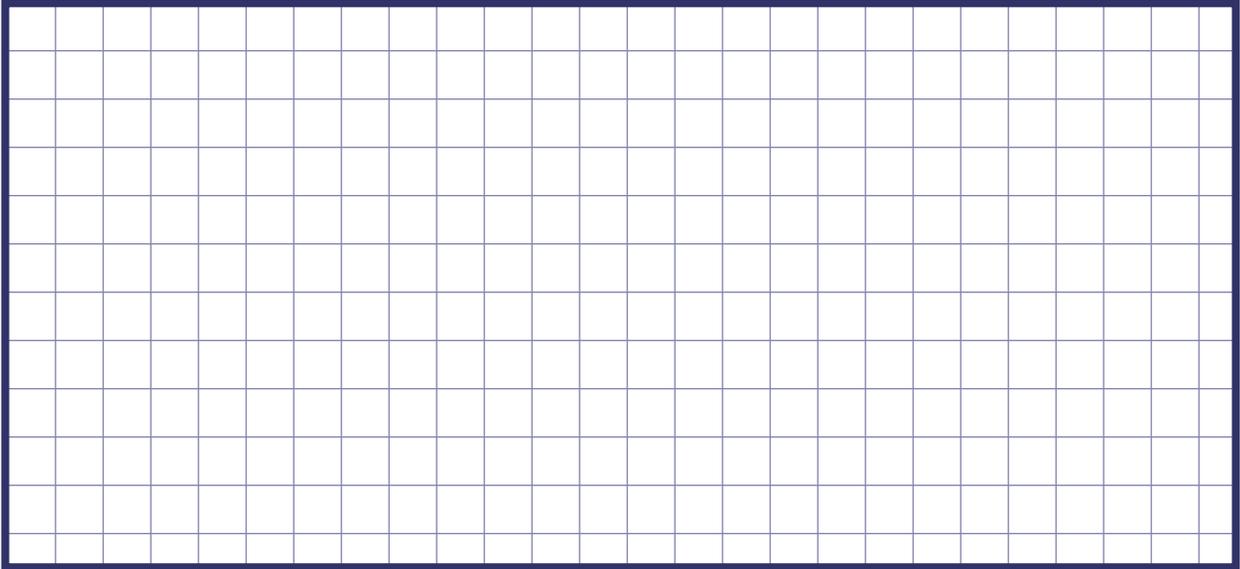
A cooler was filled to the fill line. The fill line is 1 inch from the top. The cooler is in the shape of a right circular cylinder with a height of 26 inches and a diameter of 16 inches, as shown below.



After 6 hours the cooler was $\frac{1}{4}$ full. What was the average amount of ice water used each hour? Show your work or explain your thinking.

Mathematics

Do not write outside this box.



Part A On your answer document, draw a coordinate plane that uses only Quadrant 1.

- Draw the x -axis.
- Label the x -axis with the numbers 0 through 10 (use increments of 1).
- Label the x -axis "Time (minutes)."
- Draw the y -axis.
- Label the y -axis with the numbers 0 through 1,000 (use increments of 100).
- Label the y -axis "Data Downloaded (megabytes)."

Part B On your coordinate plane, draw a graph using the following description: A computer is downloading a new program that has a total of 500 megabytes at a rate of 50 megabytes per minute. The computer already has 200 megabytes of data that was downloaded from a previous program.

Part C Write the equation of the graph.

Part D Explain what your graph represents. Include in your response whether the graph is linear or nonlinear, a function or not a function, and increasing or decreasing.

Mathematics

Do not write outside this box.

