

Comparing Functions in Different Representations

Name: _____ Date: _____

LEARNING OBJECTIVE

The student will compare linear functions represented as tables, graphs, and equations to determine which has the greater rate of change.

MATERIALS NEEDED

- index cards (at least 9)
- graph paper
- pencil
- ruler
- scissors

HANDS-ON ACTIVITY

1. Create 3 sets of cards (table, graph, equation) for 3 different linear functions: on one card write a table of values, on another sketch a small graph, and on another write an equation — mix them up so no two cards for the same function are next to each other.
2. For Function 1, use the table: $x = 0, 1, 2, 3$ and $y = 3, 5, 7, 9$. Calculate its rate of change (slope) from the table.
3. For Function 2, sketch a small graph on an index card showing a line passing through $(0, 1)$ and $(2, 9)$, and calculate its slope from the graph.
4. For Function 3, write the equation $y = 4x - 1$ and identify its slope directly from the equation.
5. Lay all 9 cards face-up, mixed together, and sort/match them back into their 3 correct sets (table+graph+equation) by comparing calculated slopes; then rank the 3 functions from least to greatest rate of change.

QUESTIONS

1. What is the slope (rate of change) of Function 1 (the table)?
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2. What is the slope of Function 2 (the graph through $(0, 1)$ and $(2, 9)$)?
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3. What is the slope of Function 3, $y = 4x - 1$?

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- 4. Rank the 3 functions from least to greatest rate of change and explain how you compared them even though they were shown differently.**
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