

## Linear Relationships and Functions

### EDUCATION PAYS

The following data was taken from an article, "Education Pays," by Sandy Baum and Jennifer Ma:

Age	Median Annual Income with a High School Diploma	Median Annual Income with a Bachelor's Degree
22	\$19,882	\$26,547
23	19,882	26,547
24	19,882	26,547
25	27,713	41,593
26	27,713	41,593
27	27,713	41,593
28	27,713	41,593
29	27,713	41,593
30	27,713	41,593

- Does the data relating age with income for those with a high school diploma represent a linear relationship? Explain your reasoning.
- Is the median annual income for either the High School Diploma or the Bachelor's Degree a function of age? Explain your reasoning.
- Explain why the data in the table is considered discrete.
- Three relations follow. For each relation, explain whether:
  - The information represents a linear relationship.
  - The information is discrete or continuous.
  - The information represents a function.

a.

$x$	$y$
1	-3
2	-7
3	-11
4	-15

b.  $y = -2x + 3$

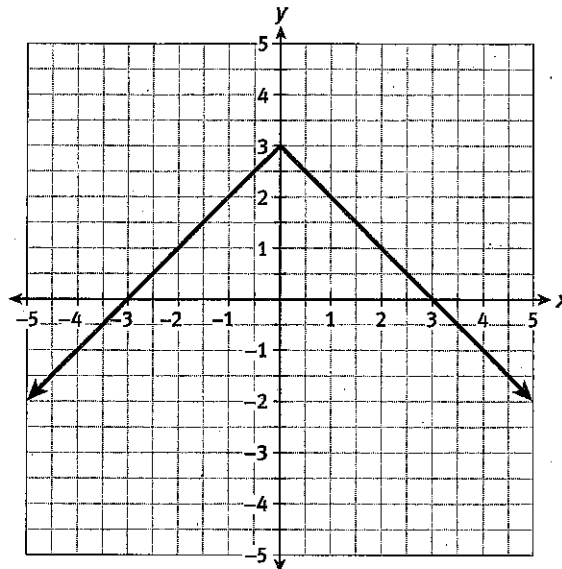
# Embedded Assessment 1

Use after Activity 3.2.

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c.



	Exemplary	Proficient	Emerging
<b>Math Knowledge</b> #1, 2, 4	<p>The student:</p> <ul style="list-style-type: none"> <li>• Correctly identifies the data as linear or nonlinear. (1)</li> <li>• Correctly identifies whether or not income is a function of age for both relations. (2)</li> <li>• Correctly identifies data as linear or nonlinear, discrete or continuous, and determines if the data represents a function. (4)</li> </ul>	<p>The student provides complete and correct identification for two of the items.</p>	<p>The student provides at least two identifications, but only one is complete and correct.</p>
<b>Communication</b> #1, 2, 3	<p>The student:</p> <ul style="list-style-type: none"> <li>• Correctly explains why the data is nonlinear or nonlinear. (1)</li> <li>• Correctly explains why income is or is not a function of age for both relations. (2)</li> <li>• Correctly describes why the data is discrete. (3)</li> </ul>	<p>The student gives explanations for the three items, but only two are complete and correct.</p>	<p>The student gives at least two of the required explanations for questions 1, 2, and 3, but they are incomplete and incorrect.</p>