

Indicator 27 Class Notes by Mrs. Joshi

Quantitative Relationships-(AL 21, 21a)

I can analyze the relationship between a set of independent and dependent variables.

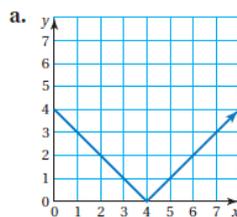
I can create graphs, tables, and equations that represent the same relationship.

A function whose graph is a straight line is a **linear function**.

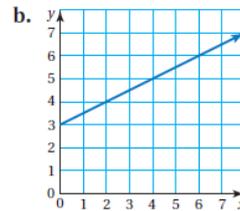
EXAMPLE 1 Identifying Linear Functions

Key Vocabulary
linear function,
p. 394

Does the graph represent a linear function? Explain.



❖ The graph is not a straight line. So, the graph does *not* represent a linear function.



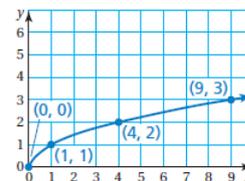
❖ The graph is a straight line. So, the graph does represent a linear function.

EXAMPLE 2 Identifying a Linear Function

Input, x	Output, y
0	0
1	1
4	2
9	3

Does the input-output table represent a linear function? Explain.

The ordered pairs in the table are $(0, 0)$, $(1, 1)$, $(4, 2)$, and $(9, 3)$. Plot the ordered pairs and draw a graph through the points.



❖ The graph is not a straight line. So, the function is *not* linear.

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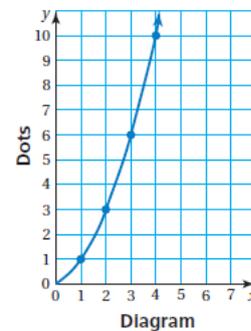
EXAMPLE 3 Identifying a Linear Function

Is the function relating the diagram number x to the number of dots y linear?



Make an input-output table. Then plot the ordered pairs and draw the graph.

Diagram, x	Dots, y	(x, y)
1	1	(1, 1)
2	3	(2, 3)
3	6	(3, 6)
4	10	(4, 10)

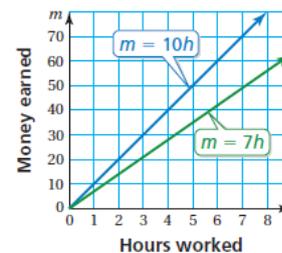


❖ The graph is not a straight line. So, the function is *not* linear.

EXAMPLE 4 Comparing Linear Functions

Your sister earns \$10 per hour.
Your brother earns \$7 per hour.

The functions $m = 10h$ and $m = 7h$ show the relationship between the numbers of hours h they work and the money m they earn. Which graph is steeper? Explain.



❖ The graph of $m = 10h$ is steeper. The reason it is steeper is that your sister's hourly rate is greater than your brother's hourly rate.