NAME _____ DATE _____ PERIOD _____

12-1 Study Guide and Intervention

Linear and Nonlinear Functions

A nonlinear function does not increase or decrease at the same rate. You can use a table to determine if the rate of change is constant.

Example 1 **Determine whether the table represents a *linear* or *nonlinear* function. Explain.**

	+4	+4	+4	
x	−2	2	6	10
y	8	3	−1	−4
	−5	−4	−3	

As x increases by 4, y decreases by a different amount each time. The rate of change is not constant, so this function is nonlinear.

Exercises

Determine whether the table represents a *linear* or *nonlinear* function. If it is linear, write the equation for the function.

1.

x	1	2	3	4
y	3	6	9	12

2.

x	0	2	4	6
y	5	3	0	−4

3.

x	1	2	3	4
y	5	7	9	11

4.

x	−2	0	2	4
y	0	1	3	9

5.

x	−1	0	1	2
y	8	4	0	−4

6.

x	2	3	4	5
y	3	5	8	12

7.

x	−2	1	4	7
y	−4	1	6	11

8.

x	3	6	9	12
y	10	6	3	1

9.

x	2	4	6	8
y	12	9	6	3