Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Table #: \_\_\_\_\_\_\_ Period: \_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_

**6.4A Comparing Linear and Nonlinear Functions\_Classwork**

*Objective: Determine whether tables, graphs and equations are linear or nonlinear.*

*HW: (6.4) p. 270 #1, 3 – 10, 12 - 16 (Solutions on p. A30)*

LESSON LAUNCH: Look at the rate of change for each table. Determine if the rate of change is *constant* or *not constant* and use that information to determine whether the function is *linear* or *non-linear*. Note whether or not the function can be written in slope-intercept form.

1. y = x + 2 2. y = x – 2

 

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. y = 2x 4. $y= \frac{2}{x}$  

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. y = x2 6. $y= \left|x\right|$

 

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Read the Examples 1 – 4 on p. 268-269. Do ON YOUR OWN Problems #1- 6

**DOES THE TABLE OR GRAPH REPRESENT A *LINEAR* OR *NONLINEAR* FUNCTION? EXPLAIN**

|  |  |  |  |
| --- | --- | --- | --- |
| **Example 1:** | **Example 2:** | **Example 3:** | **Example 4:** |

|  |  |  |
| --- | --- | --- |
|  |  |  |
| **EXAMPLE 3 (p.269): Which equation(s) represents a *nonlinear* function?**   |

**DOES THE EQUATION REPRESENT A *LINEAR* OR *NONLINEAR* FUNCTION? EXPLAIN**

|  |  |  |
| --- | --- | --- |
| 4. $ 2x-2y=x+6$ | 5. $y=\frac{4x}{3}$ | 6. $ 2(y+1)=3$ |

|  |
| --- |
| 7. The table shows the volume V (in cubic feet, $ft^{3}$) of a cube with an edge length of x feet. Does the table represent a linear or nonlinear function? Explain.  |
| 8. The table represents a LINEAR FUNCTION that shows the amount of money saved after *x* weeks. Complete the table.

|  |  |
| --- | --- |
| Weeks, x | Savings ($), y |
| 0 | 19 |
| 1 | ? |
| 2 | 57 |

 |

**Summary: IS IT LINEAR OR NONLINEAR?**

|  |  |  |
| --- | --- | --- |
| Type of Function | LINEAR | NONLINEAR |
| Graph |  |  |
| Equation |  |  |
| Table |  |  |