**Writing Linear Equations (Function Rules)**

*Determine what happens from x to y. If it is increasing, you will need to add or multiply. If it is decreasing, you will need to subtract or divide.*

*1-Step*

*Equations:*

Practice:

|  |  |
| --- | --- |
| x | y |
| -1 | -4 |
| 0 | 0 |
| 1 | 4 |
| 2 | 8 |
| 3 | 12 |

|  |  |
| --- | --- |
| x | y |
| -1 | -4 |
| 0 | -3 |
| 1 | -2 |
| 2 | -1 |
| 3 | 0 |

|  |  |
| --- | --- |
| x | y |
| -6 | 2 |
| -3 | 1 |
| 0 | 0 |
| 3 | -1 |
| 12 | -4 |

1) 2) 3)

Helpful Hint: Look at the “0” term in the x column. If the y is also “0,” try multiplication or division. If the y is a number other than “0,” that is the amount that is added or subtracted.

*2-Step Equations:*

Step 1: What is “y” when “x” equals 0? This is the constant that is added or subtracted.

Step 2: Add or subtract that number and then look for the change from x to y. (Use the opposite operation!)

Step 3: Use this to help you find what to multiply or divide. Try numbers in the equation until you find the rule. Think about your results as you try numbers and then make adjustments.

Step 4: Check your rule with each of the ordered pairs.

\*Note: If there is no value for x = 0, extend the patterns to find what y equals when x = 0.

Practice:

Use the 4 steps to write the rule for the following:

|  |  |
| --- | --- |
| x | y |
| -1 | -4 |
| 0 | -2 |
| 1 | 0 |
| 2 | 2 |
| 3 | 4 |

|  |  |
| --- | --- |
| x | y |
| -4 | -1 |
| -2 | 0 |
| 2 | 2 |
| 4 | 3 |
| 6 | 4 |

A) B)

|  |  |
| --- | --- |
| x | y |
| -1 | -1 |
| 0 | 2 |
| 1 | 5 |
| 2 | 8 |
| 3 | 11 |

|  |  |
| --- | --- |
| x | y |
| -1 | 4 |
| 0 | 3 |
| 1 | 2 |
| 2 | 1 |
| 3 | 0 |

C) D)

|  |  |
| --- | --- |
| x | y |
| -4 | 0 |
| 4 | 2 |
| 8 | 3 |
| 12 | 4 |
| 20 | 6 |

|  |  |
| --- | --- |
| x | y |
| -1 | -2 |
| 0 | 3 |
| 2 | 13 |
| 4 | 23 |
| 7 | 38 |

E) F)