**MAKING CONNECTIONS: LINEAR FUNCTIONS**
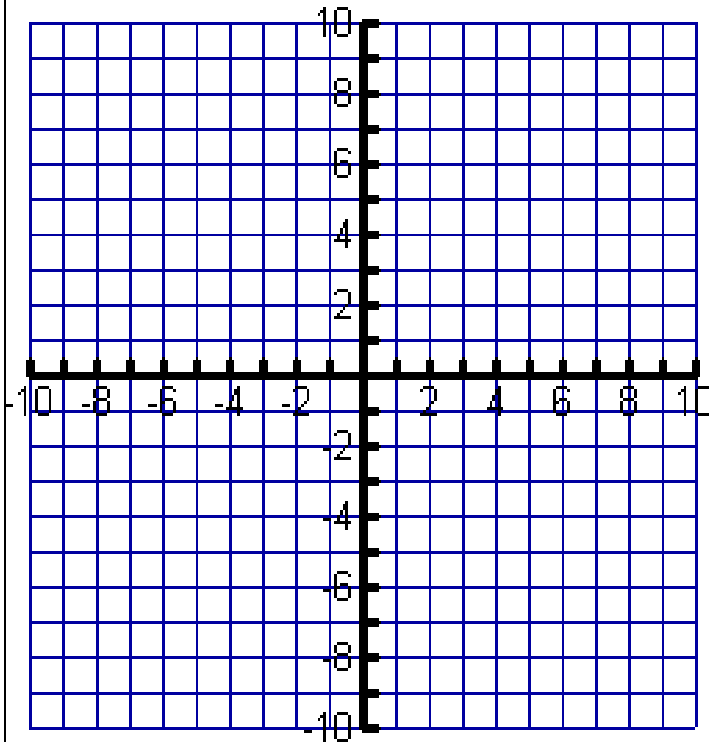
## EQUATION:  x + 3y = 12

Write the equation in slope-intercept form.

## TABLE

| x | y |
|---|---|
|   |   |
|   |   |
|   |   |
|   |   |
|   |   |

## GRAPH THE LINE



## VERBAL

On the graph of the function, when

the value of *x* increases by ____ unit(s),

the value of *y* _____ by ____ unit(s).


The parent function of the given graph

is _____.

Use the answers from above to help you answer the questions on the back.

1. If the slope of this line is multiplied by -1 and the y-intercept decreases by 2 units, what is the linear equation that represents these changes?

   New Equation:_____

2. How does the graph of 3x + y = 12 compare to the original graph of x + 3y = 12?

   True or False

   a) _____ The slope of the original graph is steeper.

   b) _____The slope of the original graph is less steep.

   c) _____The original graph has a greater y-intercept.

   d) _____The original graph has a smaller y-intercept.

3. What are the intercepts of the original graph?

   x-intercept:_____          y-intercept:_____

4. Write the equation of a line that passes through the point (-6, 3) and is parallel to the original graph.

   New Equation: _____

5. If (9, y) is a point on the graph of the original function, what is the value of y?

   Answer:_____

6. Complete the following statement for the equation $y = -\frac{1}{2}x + 8$.

   As the value of x increases by ____ unit(s), the value of y _____ by ____ unit(s).