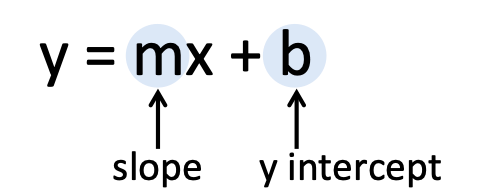
Functions in Slope-Intercept Form Part 1:

From Graph to Formula

Learning Objective: Given the graph of a linear function, express the function in slope-intercept form as .

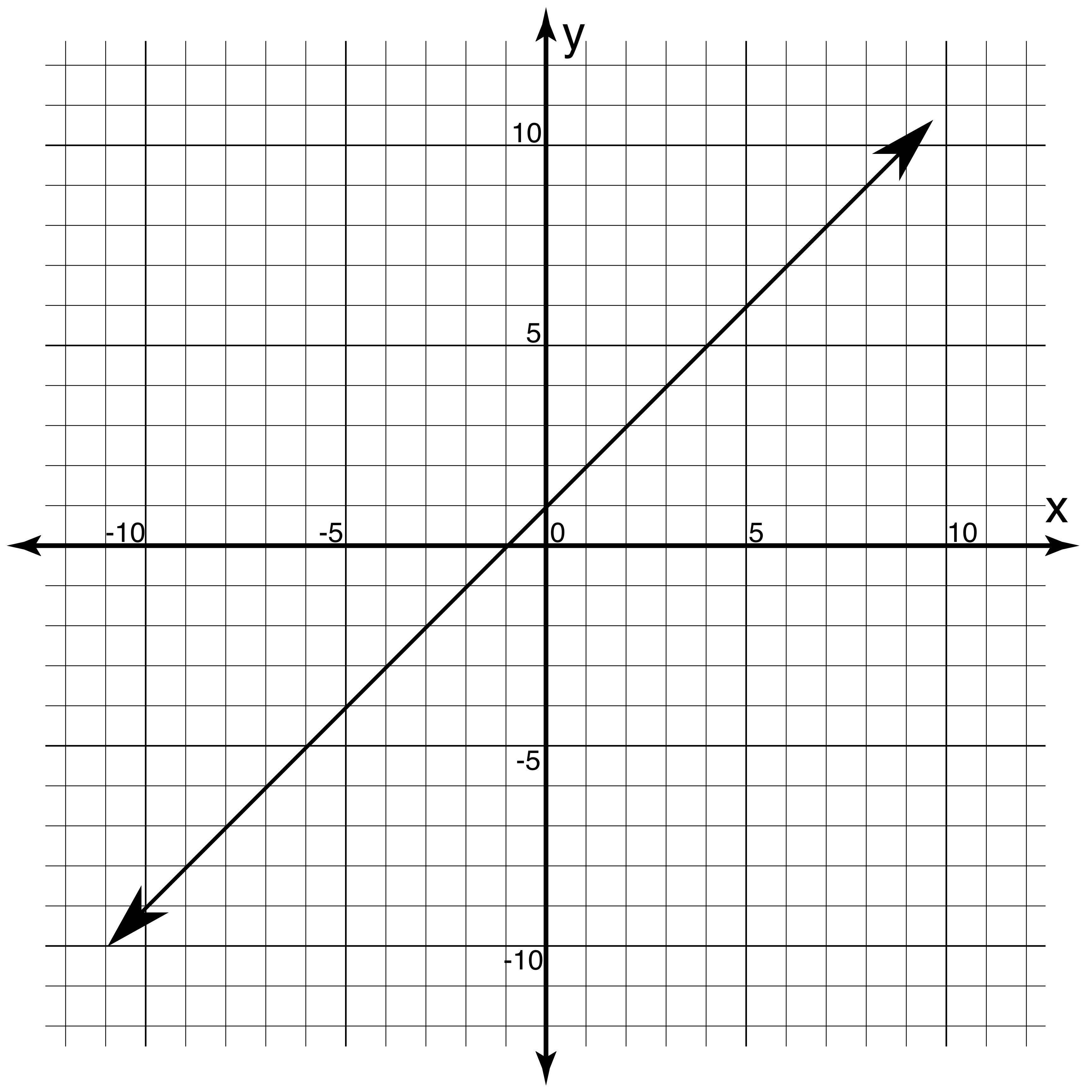


Recall:

Activity:

1. Lay your laundry line on the tarp grid so it resembles the graph of Function 1.
2. Find the y value where the line crosses the y-axis. This is the y intercept of this function, the b in its formula.
3. For each unit of x (horizontal change), how much does the y value of the line change? This is the slope of the function, the m in its formula.
4. Use the formula you found to calculate the y values in Table 1. Place colored chips on your tarp graph to check your work.
5. Repeat steps 1-4 for the functions in Functions 2 and 3.

Function 1



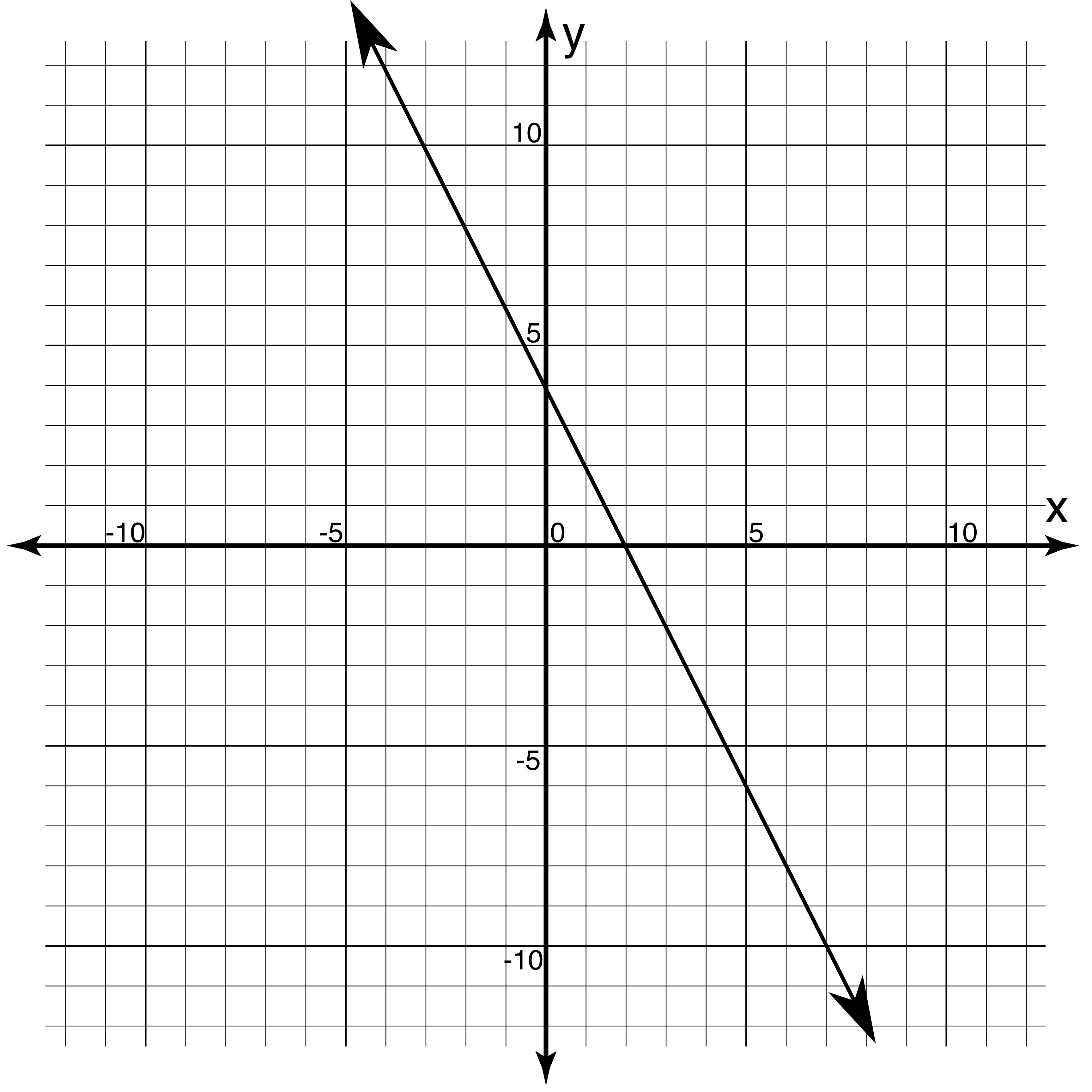
Graph of Function 1:

Function 1 formula:

y = \_\_\_x + \_\_\_

|  |  |
| --- | --- |
| x | y |
| -15 | \_\_\_ |
| -2 | \_\_\_ |
| 0 | \_\_\_ |
| 7 | \_\_\_ |
| 25 | \_\_\_ |

Function 2



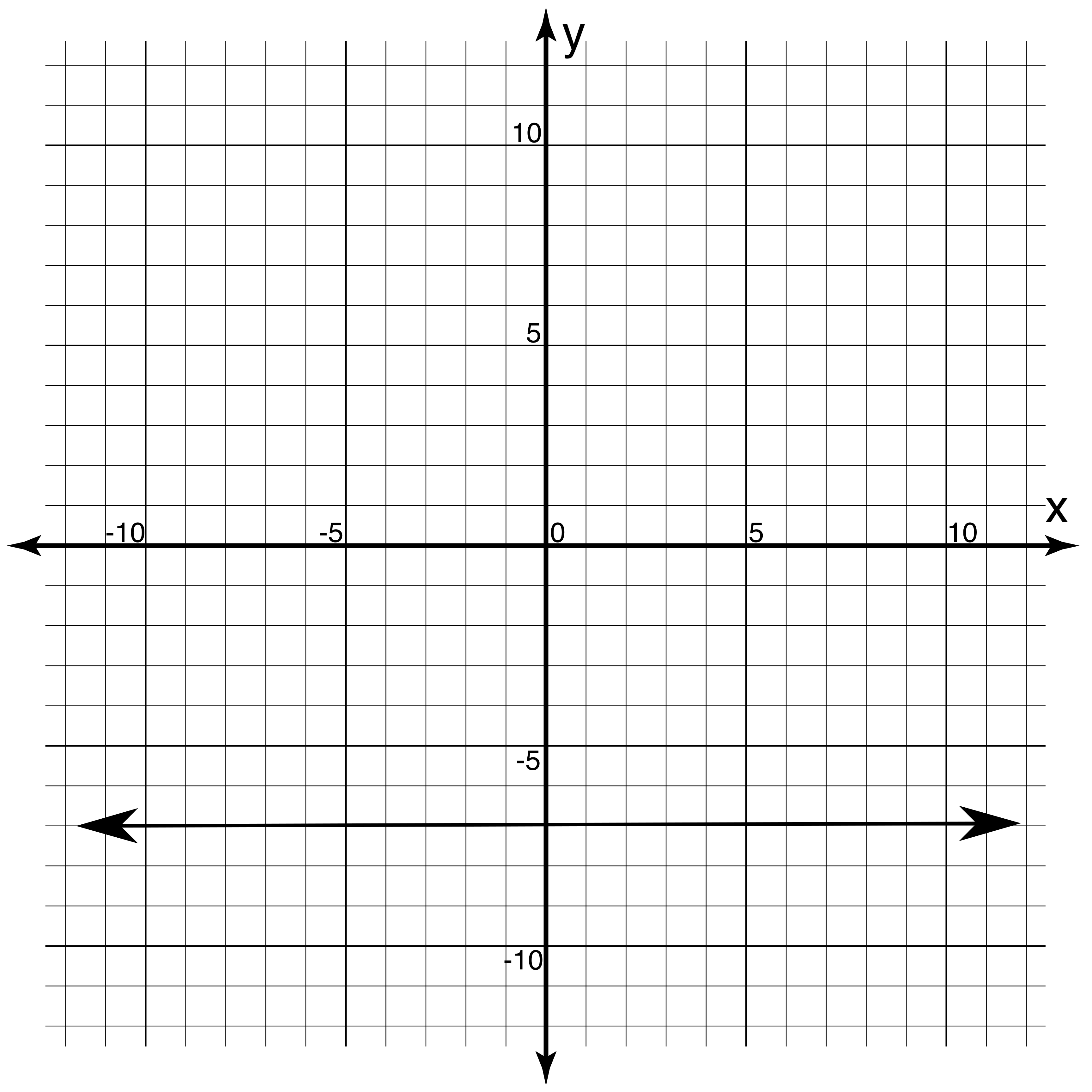
Graph of Function 2:

Function 2 formula:

y = \_\_\_x + \_\_\_

|  |  |
| --- | --- |
| x | y |
| -8 | \_\_\_ |
| -4 | \_\_\_ |
| 0 | \_\_\_ |
| 3 | \_\_\_ |
| 7 | \_\_\_ |

Function 3



Graph of Function 3:

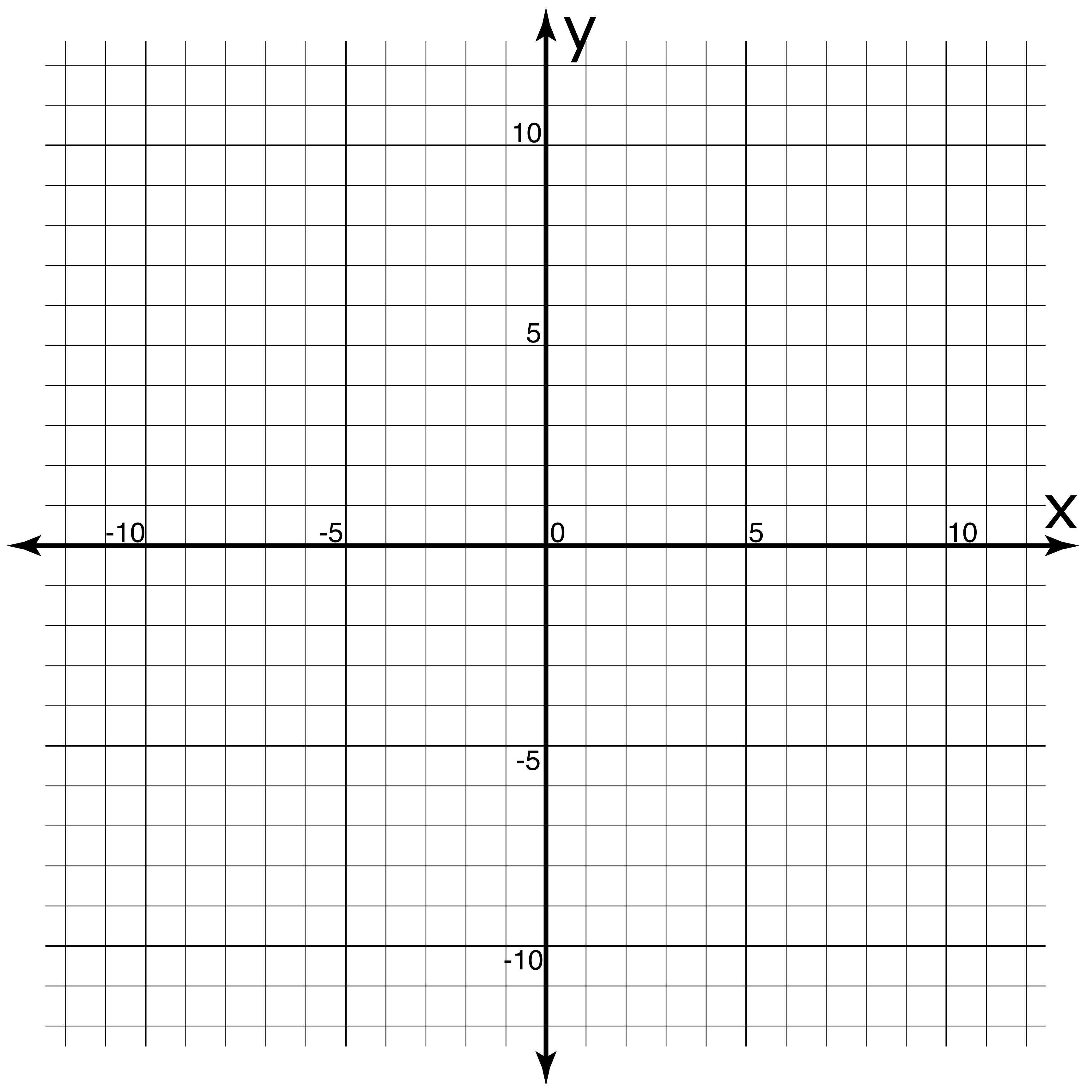
Function 3 formula:

y = \_\_\_x + \_\_\_

|  |  |
| --- | --- |
| x | y |
| -15 | \_\_\_ |
| -0.5 | \_\_\_ |
| 0 | \_\_\_ |
| 6 | \_\_\_ |
| 19 | \_\_\_ |

Extension:

* Graph a linear function of your choosing on the grid below.
* Select x-values in the table below.
* Exchange this sheet with another group.
* As you did for Functions 1-3, create the graph on your tarp, find the formula for each other’s functions, and complete the tables of values.



Graph of Your Function:

Your function’s formula:

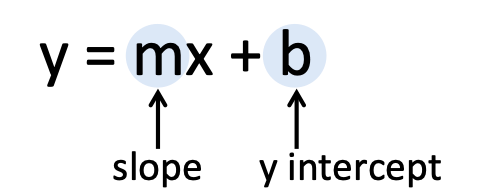
y = \_\_\_x + \_\_\_

|  |  |
| --- | --- |
| x | y |
| \_\_\_ | \_\_\_ |
| \_\_\_ | \_\_\_ |
| \_\_\_ | \_\_\_ |
| \_\_\_ | \_\_\_ |
| \_\_\_ | \_\_\_ |

Functions in Slope-Intercept Form Part 2:

From Formula to Graph

Learning Objective: Given the formula of a linear function in slope-intercept form as , create a graph of that function.

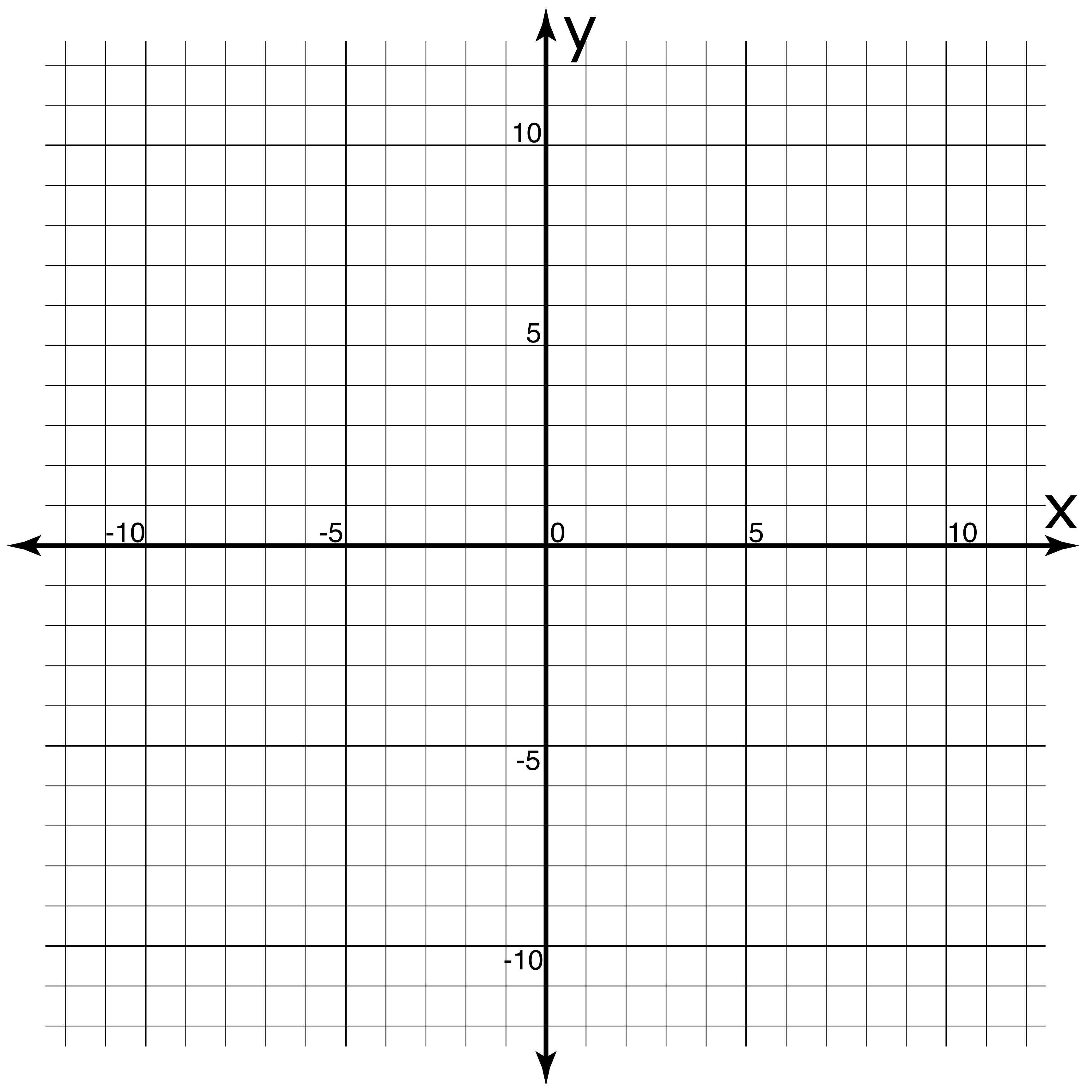


Recall:

Activity:

1. One person stands at the function’s y intercept, as given by the b value, with a yardstick. Lay the yardstick at your feet so that it crosses the y-axis at value b.
2. Rotate the yardstick so that for each x horizontal unit away, the y value changes by m, the function’s slope.
3. Sketch the resulting graph on the small grid provided below. You may need to lay multiple yardsticks end-to-end.
4. On the tarp, walk along your graph to find the y-values to complete the table. Verify them algebraically.
5. Repeat steps 1-4 for the functions in Functions 2 and 3.

Function 1



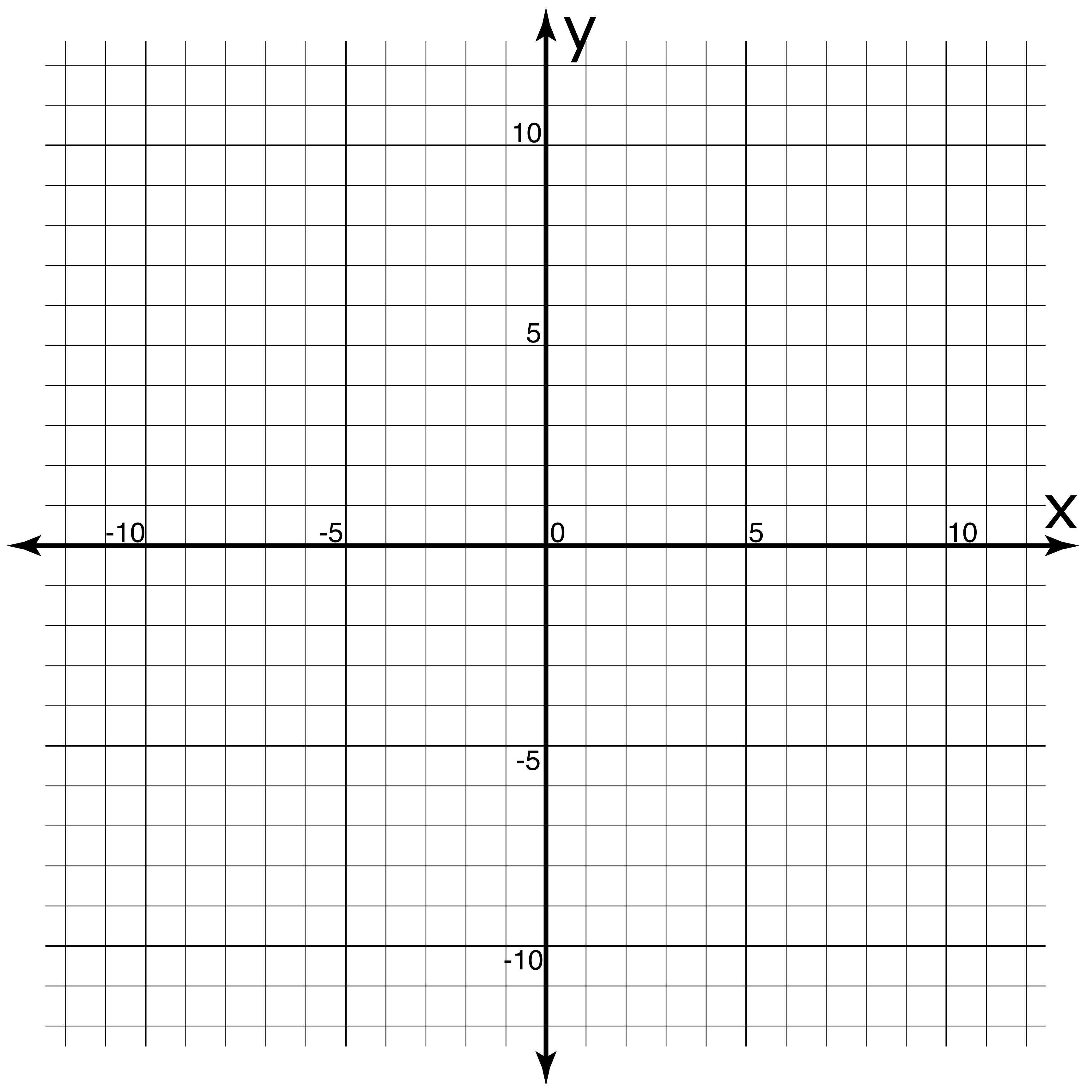
Graph of Function 1:

Function 1 formula:

y = x - 1

|  |  |
| --- | --- |
| x | y |
| -10 | \_\_\_ |
| -5 | \_\_\_ |
| 0 | \_\_\_ |
| 5 | \_\_\_ |
| 10 | \_\_\_ |

Function 2



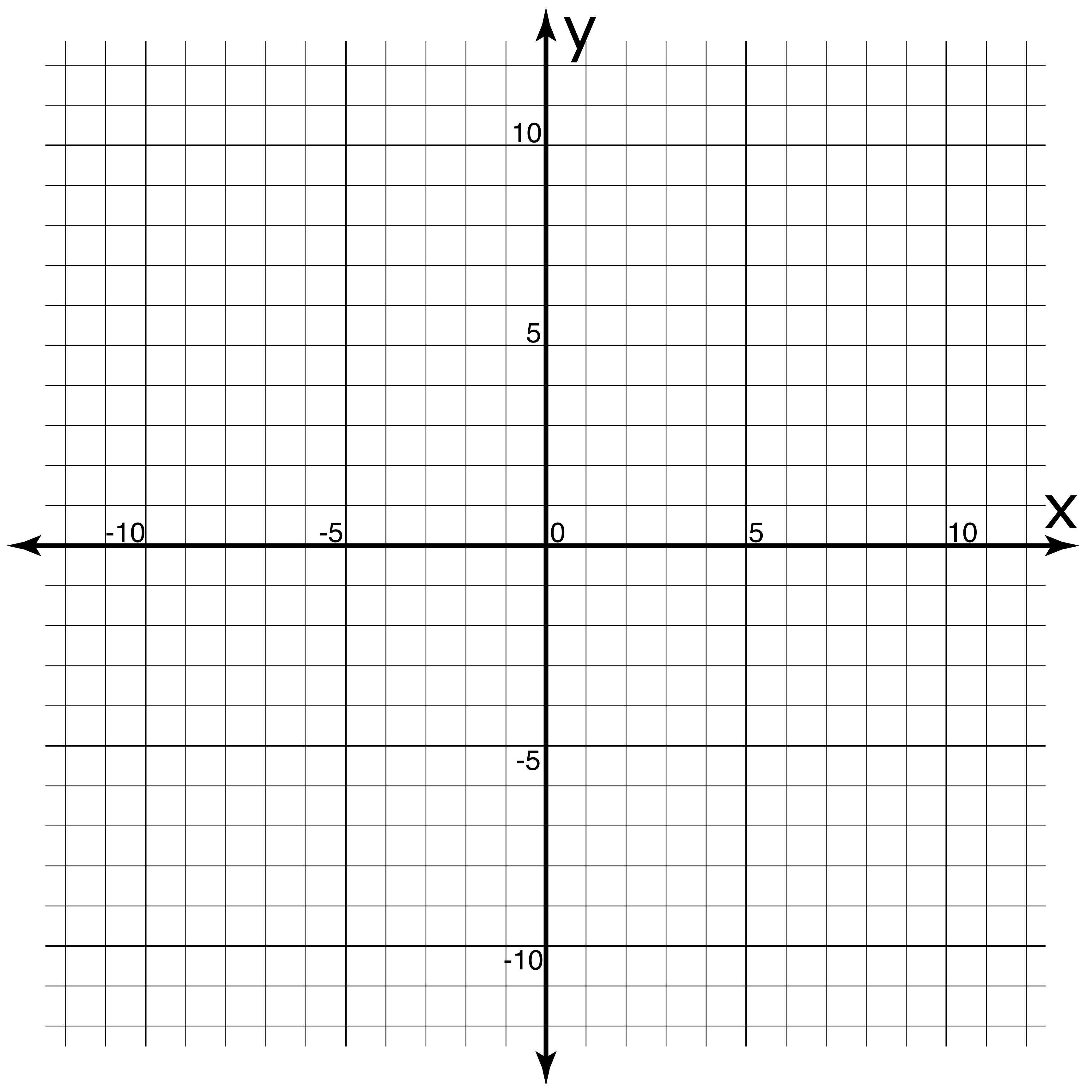
Graph of Function 2:

Function 2 formula:

y = 3x - 2

|  |  |
| --- | --- |
| x | y |
| -3 | \_\_\_ |
| -1 | \_\_\_ |
| 0 | \_\_\_ |
| 2 | \_\_\_ |
| 5 | \_\_\_ |

Function 3



Graph of Function 3:

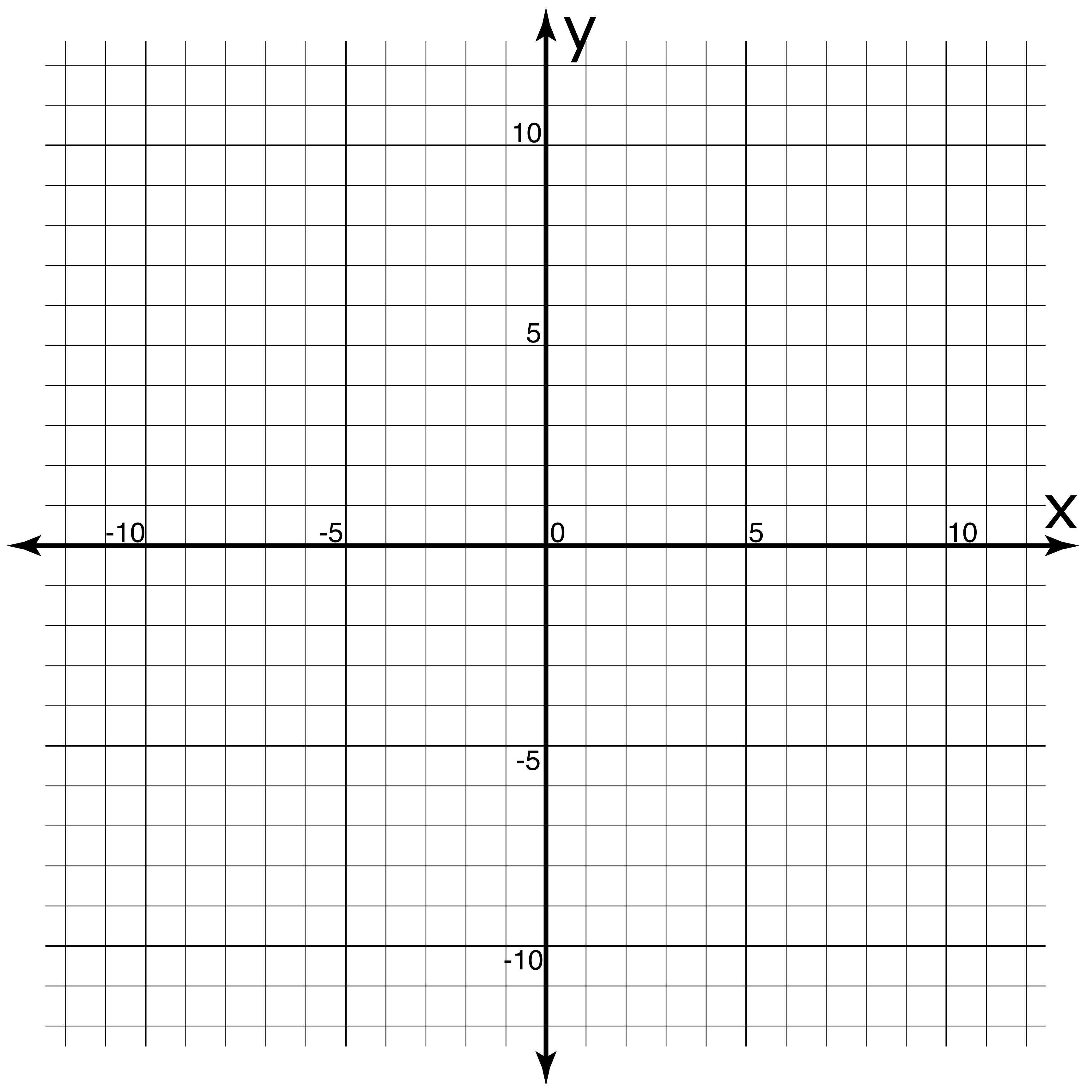
Function 3 formula:

y = -½x + 4

|  |  |
| --- | --- |
| x | y |
| -10 | \_\_\_ |
| -4 | \_\_\_ |
| 0 | \_\_\_ |
| 4 | \_\_\_ |
| 10 | \_\_\_ |

Extension:

* Write the formula for a linear function of your choosing in the blanks below.
* Select x-values in the table below.
* Exchange this sheet with another group.
* As you did for Functions 1-3, create the graph on your tarp, sketch is on the blank grid below, and complete the tables of values.



Graph of Your Function (partner group to fill out):

Your function’s formula:

y = \_\_\_x + \_\_\_

|  |  |
| --- | --- |
| x | y |
| \_\_\_ | \_\_\_ |
| \_\_\_ | \_\_\_ |
| \_\_\_ | \_\_\_ |
| \_\_\_ | \_\_\_ |
| \_\_\_ | \_\_\_ |