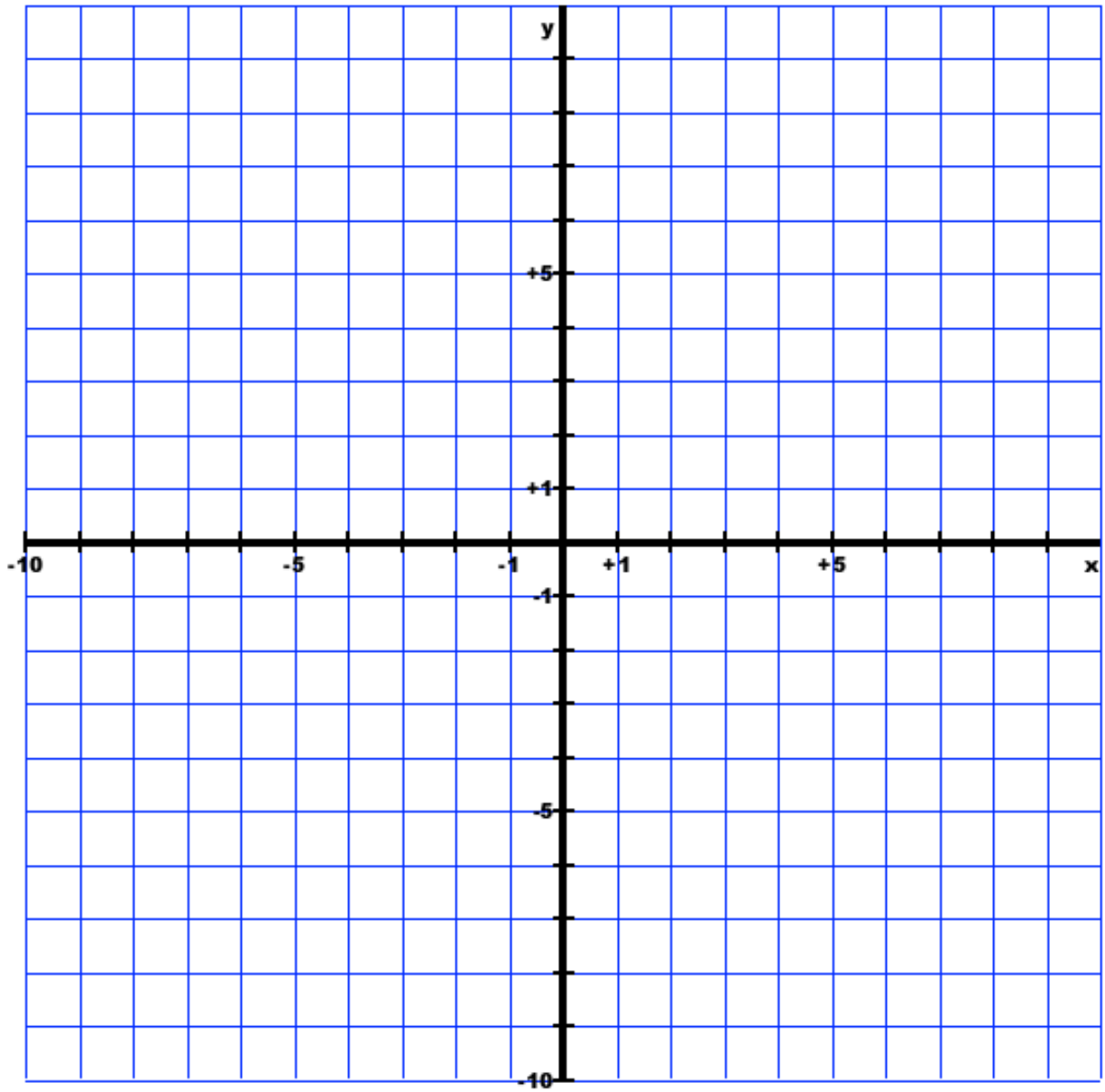
Pure Math 10 Line Segments, Graphs and Functions Pre-Project Example

We will use these sheets to:

- Create a sample picture using straight line segments
- Do the math to determine the equations of each line segment
- Show how to enter your equations into the Function Art Program



Pre-Project Example – Math

For each line segment in the sample picture:

- List the coordinates of the endpoints
- Determine the slope (show your work)
- Determine the equation of the line segment (show your work)

Letter of Line	***Coordinates of EndPoint 1***	***Coordinates of EndPoint 2***	***Slope***	***Equation of Line in the form*** $y = mx + b$
Example	(1, 5)	(3, 9)	$m = \frac{y_2 - y_1}{x_2 - x_1} \Rightarrow m = \frac{9-5}{3-1}$ $= \frac{4}{2}$ $\boxed{m = 2}$	$y = mx + b$ $= 2x + b$ Point 2 $\Rightarrow$ $9 = 2(3) + b$ $9 = 6 + b$ $b = 3$ $\boxed{y = 2x + 3}$

Letter of Line	***Coordinates of EndPoint 1***	***Coordinates of EndPoint 2***	***Slope***	***Equation of Line in the form*** $y = mx + b$

Pre-Project Example – Function Art Program

For each line segment in the sample picture:

- List the coordinates of the endpoints
- Write the equation you determined on the previous page
- Write the equation how it should be entered into the Function Art program

When entering your equation into the Function Art program you must:

- Only write the right side of the equation (do not write "y = ")
- Use the * symbol for multiplication (Instead of "$3x$" you must write "$3*x$")
- Follow the equation with the domain minimum value and the domain maximum value, separated by semicolons (;).

Letter of Line	***Coordinates of EndPoint 1***	***Coordinates of EndPoint 2***	***Equation of Line***	***Equation and Domain for Function Art Program***
Example	(1, 5)	(3, 9)	$y = 2x + 3$	2*x + 3 ; 1 ; 3

Pre-Project Example – Conversion to Standard Form

In this project you will be required to convert the equations for some of your lines from Slope-Intercept form to Standard Form.

Letter of Line	***Slope-Intercept Form***	***Standard Form***
Example	$y = 2x + 3$