**Equation Art Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Objective: Create a drawing on graph paper using only lines (horizontal, vertical, and diagonal). Provide a list of all equations used to create your drawing with accurate domain and range restrictions for each line.

**Important Information**

• Project must be displayed on graph paper with labeled *x* and *y* axes

• Number your lines 1-10 on the picture (you may have other lines, but must number the 10 )

• Your design must have…

* at least 4 lines with positive slope
* at least 4 lines with negative slope
* at least 1 pair of parallel lines
* at least 1 vertical line
* at least1 horizontal line
* at least 2 of the lines must have y-intercepts that are **not** integers\*.

• Show the work used to find the equation of the lines

• Write each equation in slope-intercept.

• Give the domain and range restrictions for each line

• Picture must be neat (use a ruler to create the lines), creative and colored

**Bonus:** Include one function in your picture that is not a linear equation, for example, we have also looked at Inverse Variation, Exponential and Square root Functions. Number this Line 11 and include the equation of the line.

**Grading Criteria**

Drawing on graph paper/All directions followed \_\_\_\_\_ / 5

Equations in slope-intercept form (work shown) 2 pts. each \_\_\_\_\_ / 20

Domain and Range restrictions 2 pts. each \_\_\_\_\_ / 20

Creativity/Neatness/Color \_\_\_\_\_ / 5

Bonus points \_\_\_\_ / 3

**Total Points: \_\_\_\_/50**

Due Date:

\* An integer is a number that can be written without a fractional or decimal component. For example, 21, 4, and −2048 are integers.

|  |  |  |  |
| --- | --- | --- | --- |
| Line Number  &  Points | Work: Find slope and y-intercept | Equation in slope-intercept form | Domain & Range |
| #1  ( , )  ( , ) |  |  | Domain: |
| Range: |
| #2  ( , )  ( , ) |  |  | Domain: |
| Range: |
| #3  ( , )  ( , ) |  |  | Domain: |
| Range: |
| #4  ( , )  ( , ) |  |  | Domain: |
| Range: |
| #5  ( , )  ( , ) |  |  | Domain: |
| Range: |
| #6  ( , )  ( , ) |  |  | Domain: |
| Range: |
| #7  ( , )  ( , ) |  |  | Domain: |
| Range: |
| #8  ( , )  ( , ) |  |  | Domain: |
| Range: |
| #9  ( , )  ( , ) |  |  | Domain: |
| Range: |
| #10  ( , )  ( , ) |  |  | Domain: |
| Range: |

**Bonus line #11**

**Type of Function: Equation of line:**

**Examples of Projects in progress:**

