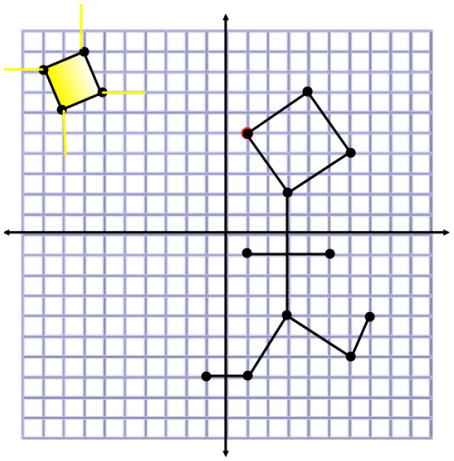
Unit 1 Culminating Assignment | Directions in Another Language



In this assignment you will be creating a picture using Mathematical directions. It needs to contain at least 20 different lines. The picture at right is an example of what I expect…

There are three major parts to this project. Please complete all three. Get started.

PART 1: **The design.** You will create a design. This design will be accurate and neat. You will need

- Parallel Lines
- Perpendicular Lines
- Domain and Range that limits the lines
- Other lines that are just simply there to help with the picture.
- If you want to put in Parabolas or Circles, feel free to try (but you mut research their equations & figure out how to use them).

PART 2: **The poster**. I want you to create an awesome poster that displays your picture, along with the directions sheet. This should be very very neat, and easy to see from a distance.

PART 3: **The directions sheet**. You will be writing mathematical directions for this picture. I will give you an example below. In the language you need to have statements like…

Direction Requirements

- Ex. 1: Has a slope of "m" and goes through the point (x,y).
- Ex. 2: Goes through the points (x_1, y_1) and (x_2 , y_2).
- Ex. 3: Is Parallel to Line # and goes through the point (x,y)
- Ex. 4: Is Perpendicular to Line # and goes through the point (x,y)
- Is a vertical Line that goes through the point (b,y) (x = b)
- Is a horizontal Line that goes through the point (x,a) (y = a)
- You must have lines in ALL FORMS: … **Slope/Intercept form $Y = mx + b$** and **Point/Slope form $y - y_1 = m(x-x_1)$ & STANDARD FORM $Ax + By = C$**

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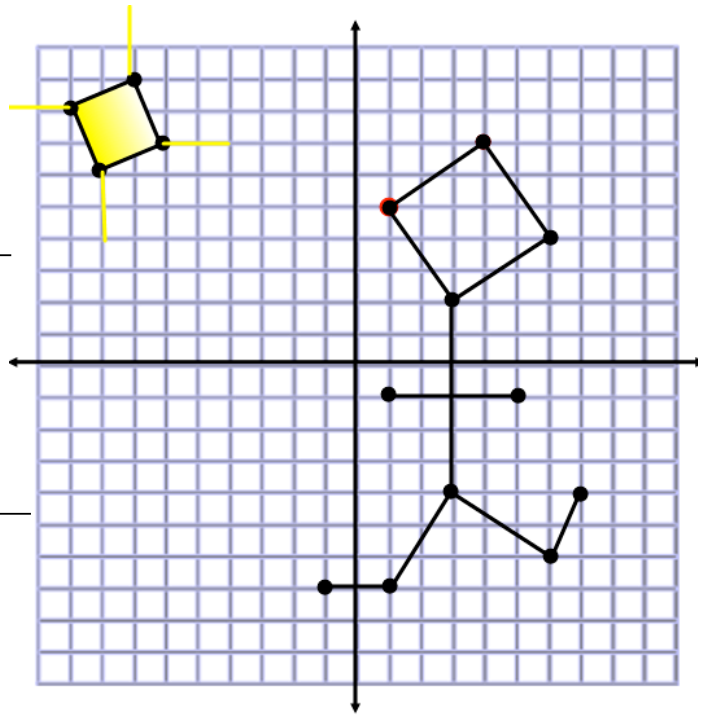
Example: ***From the picture***



Line 1: Has a slope of 2/3 and goes through the point (1,5)

- Domain: $1 \le x \le 4$ Range: ___ ≤ y ≤ ___
- Equation: _____

Line 2: Is **perpendicular** to Line 1 and goes through the point (1,5)

- Domain: $4 \le x \le 6$ Range: ___ ≤ y ≤ ___
- Equation: _____

Line 3: Is **parallel** to Line 1 and goes through the point (3,2)

- Domain: $3 \le x \le 6$ Range: ___ ≤ y ≤ ___
- Equation: _____

Line 4: Is perpendicular to Line 3 and goes through the point (1,5)

- Domain: $1 \le x \le 3$ Range: ___ ≤ y ≤ ___
- Equation: _____

Line 5: Is perpendicular to the equation y=5 and goes through the point (3,-1)

- Domain: ___ ≤ x ≤ ___ Range: $2 \le y \le -4$
- Equation: _____

Line 6: Is perpendicular to Line 5 and goes through the point (1,-1)

- Domain: $1 \le x \le 5$ Range:
- Equation: _____

Line 7: Is goes through the two points (1,-7) and (3,-4)

- Domain: $1 \le x \le 3$ Range: ___ ≤ y ≤ ___
- Equation: _____

ETC… continue on and on☺