

# ALGEBRA LINEAR EQUATIONS PROJECT

Name: \_\_\_\_\_ Pd: \_\_\_\_\_ Due: \_\_\_\_\_

- \_\_\_\_\_/5 1. Correctly complete the design on your graph paper. The picture should be colored and the final poster/presentation decorated to go with the theme of the picture.
- \_\_\_\_\_/5 2. In each quadrant listed below, **highlight** four segments of each type:
- a. Quadrant I: four segments with a negative slope
  - b. Quadrant II: four segments with a positive slope
  - c. Quadrant III: four segments with an undefined slope
  - d. Quadrant IV: four segments with zero slope
- \_\_\_\_\_/10 3. In paragraph form, explain how to find the slope of any given line segment **and** how to find the equation of a line segment given two points. These explanations should be typed on a separate sheet of paper and displayed on the poster.
- \_\_\_\_\_/60 4. Slopes and equations for the segments:
- a. Clearly label each section by Quadrant. All slope and equation work for Quadrant I should be together and "titled" Quadrant I, etc. (4 points)
  - b. List the four segments you have highlighted in each quadrant giving the coordinates of the endpoints. (\_\_\_\_/16 points)
  - c. Find the slope of each of the segments. Show your calculations. If you used the graph, describe how you found the slope. (\_\_\_\_/16 points)
  - d. Write the equations. Show your work.
    - i. Quadrant I: write each equation in Slope-Intercept Form and Standard Form. (\_\_\_\_/8 points)
    - ii. Quadrant II: write **two** equations for each line segment in Point-Slope Form. To write each equation, use each of the two endpoints. (\_\_\_\_/8 points)
    - iii. Quadrant III: write the equation for each segment (\_\_\_\_/4 points)
    - iv. Quadrant IV: write the equation for each segment (\_\_\_\_/4 points)
- \_\_\_\_\_ 5. Be creative and original with the layout of your poster. The picture should be colored, but make sure the highlighted segments are still clearly visible. Your name and class period should be on the **back** of the poster. This project will count as 80 points of a major grade.