Algebra 1
Unit 4 – Project
Systems of Linear Equations and Inequalities

Instructions: Answer **ALL** questions. You **MUST** attach all graph/sketches and show all calculations and/or explanations to justify your answers. If you are asked to provide a graph, you **MUST** use graph paper or a graphing utility/software. Upload the completed project as a Word or PDF file.

1. Find the solution of the system of equations by graphing.

$$y = 5x + 4$$
$$y = -3x - 8$$

2. Solve the system of equations using the substitution method.

$$x = 4y - 8$$
$$3x - 6y = 12$$

3. Identify whether the system of equations has infinitely many solutions or no solutions.

$$3x - 4y = 12$$
$$\frac{3}{4}x = y + 3$$

4. Solve the system of equations using the elimination method.

$$5x - 2y = 10$$
$$4x + 3y = -6$$

5. Graph the following inequality $y > 4x - 9$ in the coordinate plane.

6. Graph the system of inequalities in the coordinate plane.

$$y \geq 4x$$
$$y < -x - 5$$