Algebra 1
Unit 6 – Project
Polynomials and Factoring

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. Simplify each expression. Write your final answer in standard form.

   a. $(5x - 1) + (2x - 3)$

   b. $(5b^4 - 2 + 3b^2) + (5b^2 - 4 + 3b^4)$

2. Write each product in standard form

   a. $(2x - 5)(3x + 1)$

   b. $(6x - 9)(6x + 9)$

   c. $(3a - 5b)^2$

3. Use a table to find each product.

   a. $(4x - 3y)(5x + y)$

   b. $(x + 4)(x^2 - 3x - 1)$

4. Write the factored form of each expression in its simplest/lowest terms.

   a. $15x^3 - 42x$

   b. $6y^5 - 42y^3 + 18y$

   c. $x^2 - 13x - 48$

   d. $10x^2 + 3x - 4$

   e. $4x^2 - 3x - 10$

5. Identify the value of c that would make each trinomial factorable using the perfect square pattern.

   a. $x^2 + 16x + c$

   b. $2x^2 - 28x + c$

   c. $3x^2 + 24x + c$