

Homework Submission: Factoring Polynomials

Ryan Lee

July 12, 2024

Instructions

Please complete the following factoring problems. Show all your work for each problem. Ensure that all work is neat and legible.

Problems

1. Factor the following quadratic equations using the factoring method discussed in class.

(a) $8x^2 + 22x + 15 = 0$

(b) $3x^2 + 11x + 6 = 0$

(c) $7x^2 + 19x + 6 = 0$

(d) $6x^2 + 17x + 12 = 0$

(e) $5x^2 + 16x + 12 = 0$

2. Solve the following quadratic equations by factoring.

(a) $2x^2 + 9x + 7 = 0$

(b) $4x^2 + 15x + 9 = 0$

(c) $9x^2 + 30x + 21 = 0$

(d) $12x^2 + 23x + 10 = 0$

(e) $10x^2 + 27x + 18 = 0$

3. For each of the following quadratic equations, verify your factored form by expanding back to the original polynomial.

(a) $6x^2 + 13x + 6 = 0$

(b) $8x^2 + 14x + 3 = 0$

(c) $5x^2 + 24x + 16 = 0$

(d) $3x^2 + 19x + 20 = 0$

(e) $7x^2 + 31x + 20 = 0$

4. Challenge problems: Factor the following quadratic equations where the leading coefficient is not 1.

(a) $9x^2 + 24x + 16 = 0$

(b) $12x^2 + 25x + 12 = 0$

(c) $15x^2 + 26x + 8 = 0$