Section Classifying Polynomials
- Adding Polynomials
  - \((2x^3 - 5x^2 + x) + (2x^2 + x^3 - 1)\)
  - \(2x^3 + -5x^2 + 1x + x^3 + 2x^2 -x -1\)
  - \(3x^3 + -3x^2 + 1x + -1\)

- Subtract Polynomials
  - \((4n^2 + 5) - (-2n^2 + 2n - 4)\)
  - \(4n^2 + 5 + 2n^2 - 2n + 4\)
  - \(6n^2 + 9 + -2n\)

Section Multiplying Polynomials
- Product of a monomial and a trinomial
  - \(-3m(m^2 + 4m - 1)\)
  - \(-3m^3 + -12m^2 + 3m\)

- FOIL
  - \((b - 8)(5b - 2)\)
  - \(5b^2 - 2b + 40b - 16\)
  - \(5b^2 + -2b + 40b + 16\)

- Multiply a binomial and a trinomial
  - \((w - 3)(w^2 + 8w + 1)\)
  - \(w^3 + 8w + 1\)
  - \(1w + -3\)
  - \(-3w^2 + -24w + -3\)
  - \(1w^3 + 5w^2 + -23w + -3\)

Section Factored Equations
- Solve the equation
  - \((x + 6)(x + 2) = 0\)
  - \(x + 6 = 0\)
  - \(x = -6\)
  - \(x + 2 = 0\)
  - \(x = -2\)

Section Factoring
- Factor
  - \(z^2 + 22z + 121\)
  - \((z + 11)(z + 11)\)

- Solve the equation with a GCF
  - \(100m^2 = -6m\)
  - \(100m + 6m = 0\)
  - \(2m(50m + 3) = 0\)
  - \(m = 0\)
  - \(m = -\frac{3}{50}\)

- Solve the equation by factoring
  - \(r^2 - 4r - 60 = 0\)
  - \((r - 10)(r + 6) = 0\)
  - \(r - 10 = 0\)
  - \(r = 10\)
  - \(r + 6 = 0\)
  - \(r = -6\)
Section Factoring with a leading coefficient
- Factoring
  - \(-4s^2 + 6s + 4\)
  \[-2(2s^2 - 3 - 2)\]
  \[-2(2s + 1)(s - 2)\]

- Solve the equation by factoring
  - \(2x^2 + 7x - 15 = 0\)
  \((2x - 3)(x + 5) = 0\)
  \(2x - 3 = 0\)
  \(x = \frac{3}{2}\)
  \(x + 5 = 0\)
  \(x = -5\)

Section Factoring Special Polynomials
- Factor the difference of two square
  - \(9w^2 - 100\)
  \((3w - 10)(3w + 10)\)

- Factor a perfect square trinomial
  - \(x^2 + 6x + 9\)
  \((x + 3)^2\)

- Solve the equation
  - \(3w^2 - 60w + 300 = 0\)
  \(3(w^2 - 20w + 100) = 0\)
  \(3(w - 10)(w - 10) = 0\)
  \(w = 10\)

Factoring Completely
- Factor
  - \(x^2 + 9x - xy - 9y\)
  \((x + 9) - y(x + 9)\)
  \((x + y)(x + 9)\)

- Solve the equation
  - \(16m^4 - 81m^2 = 0\)
  \(m^2 (16m^2 - 81) = 0\)
  \(m^2 (4m + 9)(4m - 9) = 0\)
  \(m = 0\)
  \(4m + 9 = 0\)
  \(m = -\frac{9}{4}\)
  \(4m - 9 = 0\)
  \(m = \frac{9}{4}\)