1. [25] Basic Factoring
    a. $6xy^2(3x + y - 2xy)$
    b. $(10x^2y^5 - 9t^3)(10x^2y^5 + 9t^3)$
    c. $(b - 16a)(b + 3a)$
    d. $(3x + 4)(5x - 3)$
    e. $(4 - 5b)(3a - 2b)$

2. [10] Factoring Completely / Zero Product Property
    a. $x = -\frac{4}{5}, x = 0, x = 2$
    b. $x = -2, x = 0, x = 2, x = 5$

3. [10 each] Polynomial Equations
    a. $-2x(x + 3)(x - 5) = -2x^3 + 4x^2 + 30x$
    b. After long/ synthetic division, $x^2 + 2x - 8$, $x = -4, x = 2$
    c. $x(x + 2)(x - 15) = x^3 - 13x^2 - 30x$

4. [20] Multiplication / Division of Fractions

$$-\frac{3x^3}{2(8 + x)}$$

5. [10] Addition / Subtraction of Fractions

$$-\frac{17}{2(c + 9)}$$

6. [10] Rational Equations (***Show ALL extraneous solutions**)

$$x = -\frac{5}{3}, x \neq 4$$

7. [10] Complex Fractions
    a. $-\frac{w}{4x + 3w}$

b. $\frac{3t+20}{3t-35}$

c. $\frac{y+4x}{3y-2x}$

8. [10] Division of Polynomials

$$x^2 + 2x - 8$$

9. [10] Linear Equations

a. Slope: $-\frac{5}{11}$

Equations: $y + 2 = -\frac{5}{11}(x - 5), \quad y - 3 = -\frac{5}{11}(x + 6), \; y = -\frac{5}{11}x + \frac{3}{11}$

b. [5] $x = -\frac{17}{2}$

10. [10] System of Linear Equations

$$(x, y) = (-8,3)$$