Final Math 65, Mr. Diss.
Directions: Read every problem carefully before working any problem!!! No notes, no books, no calculators.

1. Simplify, leave with positive exponents:
   a. $\left(\frac{3x^2}{4y^9}\right)^{-3}$
   b. $\left(5x^3 - 4x^2 - 3x + 5\right) - \left(8x^3 - 4x^2 - 3x - 5\right)$
   c. $\frac{20x^4 + 35x^3 - 15x^2 - 25x}{5x}$

2. Answer the following and put answers in scientific notation.
   a. Convert to decimal form: 3.2×10^{-4}.
   b. Convert to scientific notation: $4,230,000,000$.
   c. Simplify $\left(2.6 \times 10^{20}\right)\left(6 \times 10^{6}\right)$
   d. $\frac{3.2 \times 10^{12}}{8 \times 10^{7}}$

3. Graph the following parabola, $y = -x^2 - 2x + 8$. Make sure you make a table with the following information before graphing.

   - *Open Direction of parabola (up or down).*
   - Vertex
   - Axis of symmetry
   - y intercept
   - x intercepts

4. Solve the following quadratic equation by any method; check is optional.
   $2x^2 - 3x = +4$

5. Solve the following quadratic equation by any method; check is optional.
   $x^2 - 8x = -8x + 125$

6. Simplify the radical expressions.
   a. $\sqrt{48}$
   b. $\frac{2}{\sqrt{10}}$

7. Solve and check.

$$\sqrt{5x-1} = \sqrt{x+1}$$

8. Solve and solutions can be complex.

$$y^2 + 4y + 11 = 0$$

9. Solve the following equations by the square root property.

   a. $3x^2 - 2 = 0$

   b. $(2x - 3)^2 = 25$

10. Answer the following on conversions. Use conversion factors and fractions. A chart of factors is shown on the side.

    a. Convert 2 tons to ounces
    b. Convert 2 hours to seconds.

$\frac{2000\,\text{lb}}{1\,\text{ton}}$	$\frac{16\,\text{oz}}{1\,\text{lb}}$	$\frac{3\,\text{ft}}{1\,\text{yd}}$	$\frac{12\,\text{in}}{1\,\text{ft}}$
$\frac{60\,\text{sec}}{1\,\text{min}}$	$\frac{60\,\text{min}}{1\,\text{hr}}$		