Algebra 2
Unit 3 WS1

Directions: Please answer the following questions. **Show work!!**
Simplify. Remember to identify the restrictions.

1. $\dfrac{120x^3 y}{25xy^5}$

2. $\dfrac{28k^9 m}{35k^2 mn^5}$

3. $\dfrac{x^2 - 6x + 8}{x^2 + 2x - 24}$

4. $\dfrac{9x + 9}{x^2 + 8x + 7}$

5. $\dfrac{3x^2 - 6x - 24}{x^2 + 3x - 28}$

6. $\dfrac{x^3 + 3x^2 - 54x}{x^2 - 6x}$

7. Perform the indicated operation, put the polynomial in standard form, and then fill in the blanks below.
$4x^3(5x^6 - 2x^4 + 9)$

Standard form:

Degree:

Leading coefficient:

Monomial   Binomial   Trinomial   Polynomial

8. Write the equation of a line through (9, -5) and (6, -1).

Solve by factoring.

9. $y^2 - 18y + 65 = 0$

10. $21x - 18x^2 = 0$

Divide – choose long division or synthetic division.

11. $(15x^2 + 8x - 12) \div (3x + 1)$

12. $\dfrac{3x^4 - x^3 + 5x - 1}{x + 2}$

13. $(2x^3 - 2x^2 - 5x - 21) \div (x - 3)$

14. $\dfrac{6x^3 + 17x^2 - 2}{2x - 1}$