Algebra 2
Unit 3 WS2

Name:_____
Date:_____
Period:_____

Directions: Please answer the following questions. **Show work!!**
Perform the indicated operation. Don't forget to list the restrictions.

1. $\frac{10x^8}{6x^4}$

2. $\frac{x^2+5x}{3x+15}$

3. $\frac{x^2+x-2}{x^2+2x-3}$

4. $\frac{4x-x^2}{x^2-2x-8}$

5. $\frac{x^2-2x-8}{9x^2-16} \bullet \frac{3x^2+10x+8}{x^2-16}$

6. $\frac{x^5-4x^3}{x^2-x-2} \div \frac{x^5-x^4-2x^3}{x^2-1}$

7. Use the given factors and your algebra skills to find all the roots of the polynomial without a graphing calculator.

$f(x) = x^4 - 6x^3 - 96x - 256$; $(x - 8)$ and $(x + 2)$

8. Simplify the following:

a. $\sqrt{108}$ b. $\sqrt{-150}$ c. $\sqrt{(-4)^2 - 4(-2)(-7)}$

Given the following equations, answer the questions that follow without a graphing calculator:
HINT: Look back in your Unit1 notes.

9. $y = 2(x - 7)^2 - 8$

What form is this in?

What is the vertex?

What is the y-intercept?

What are the x-intercepts, if any?

10. $y = -2(x + 5)(x - 3)$

What form is this in?

What is the vertex?

What is the y-intercept?

What are the x-intercepts, if any?