Name: _____ Per: ___

# Algebra 2 Practice 8.5 & 8.6

**Simplify:**

1. $\frac{3x}{x^{10}} \cdot \frac{x^3}{27} \cdot \frac{9x^4}{2}$

2. $\frac{4x-8}{x^2-x-6} + \frac{x^3+x^2-6x}{x^2-9}$

3. $\frac{\frac{x^2-5x+6}{x^2-8x+15}}{\frac{x-2}{x-5}} \div \frac{x^2-9}{x^2+3x}$

4. $\frac{x-4}{x-7} \cdot \frac{\frac{x^2-49}{3x-12}}{\frac{x^2+14x+49}{x+5}}$

5. $\frac{x+5}{x^2+10x+25} - \frac{2x}{x^2-25}$

6. $\frac{\frac{x-3}{2x+1}}{\frac{2x-1}{x+3}} - \frac{x^2-9}{4x^2-1}$

7. $\frac{-2x^2-5x}{x^2+7x} + \frac{x-2}{x+7} + \frac{2x-3}{x}$

Solve each equation. Check your solution.

8. $\frac{x-15}{x+5}=\frac{x-12}{x}$

9. $\frac{x-2}{x}-1=\frac{2x+3}{x}$

10. $\frac{3}{4}-\frac{1}{x}=\frac{1}{2x}$

11. $\frac{x+3}{x-2}-\frac{14}{x+2}=\frac{3x-2}{x^2-4}$

12. $\frac{x}{x-2}-\frac{x-5}{5}=\frac{x-2}{5}$

Answers:

1. $\frac{1}{2x^2}$; $x \neq 0$
2. $\frac{4}{x(x+2)}$; $x \neq 0, \pm 3, \pm 2$
3. $\frac{x}{x-3}$; $x \neq 2, \pm 3, 5$
4. $\frac{x+5}{3(x+7)}$; $x \neq \pm 7, 4, -5$
5. $\frac{-1}{x-5}$; $x \neq \pm 5$
6. $0; x \neq \pm\frac{1}{2}, -3$
7. $\frac{x-3}{x}$; $x \neq 0, -7$

8-12 you are suppose to check your answers by plugging them into the original equation to show they work.