## Sec 9-4 Simplifying the Product or Quotient of Rational Expressions

- Factor all numerators and denominators.
- If mulitplying rational expressions you can simplify within the same fraction and/or cross cancel and finally multiply and write as a single fraction.
- Instead of dividing, multiply by the reciprocal then simplify. Write answer as a single fraction.
- State restrictions on the variable.

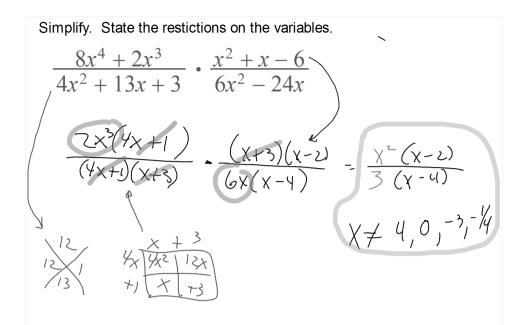
Simplify. State the restictions on the variables.

$$\frac{x^2 - 16}{9x^2 + 18x} \div \frac{x^2 - 3x - 4}{3x^2 + 6x} = \frac{x^2 - 16}{9x^2 + 18x} \cdot \frac{3x^2 + 6x}{x^2 - 3x - 4}$$

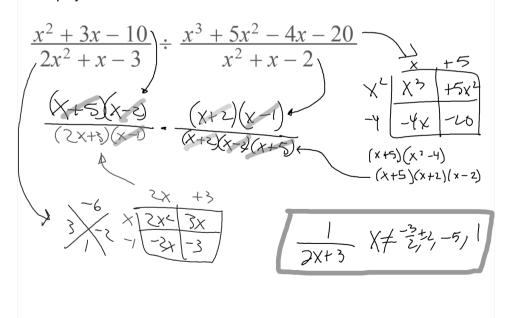
$$\frac{(\chi + 4)(x - 4)}{9 \times (x + 2)} \frac{3 \times (x + 2)}{(x - 4)(x + 1)}$$

$$= \frac{x + 4}{3(x + 1)}$$

$$\times \neq -2,0,14,-1$$



Simplify. State the restictions on the variables.



You can now finish Hwk #40

Sec 9-4

Page 511

Problems 5, 6, 10, 11, 16, 17, 39

## Find this sum:

$$\frac{6}{x^{2}-25} + \frac{7}{x^{2}-6x+5}$$

$$\frac{(x-1)}{(x-1)}\frac{6}{(x+5)(x-5)} + \frac{7}{(x-5)(x-1)}\frac{(x+5)}{(x+5)}$$

$$\frac{6x-6}{(x-1)(x+5)(x-5)} + \frac{7x+35}{(x-5)(x-1)}$$

$$\frac{13x+29}{(x+5)(x-5)(x-1)}$$

Find this sum without using a calculator.

$$\frac{11}{56} + \frac{7}{64}$$

$$\frac{8}{8} \cdot \frac{11}{7 \cdot 8} + \frac{7}{8 \cdot 8} \cdot \frac{7}{7}$$

$$\frac{8}{8 \cdot 7} + \frac{49}{8 \cdot 8 \cdot 7} - \frac{137}{8 \cdot 8 \cdot 7}$$