No clickers & yes calculators.

Have out the 11.6 Practice A w.s.

Find the LCD for problems 19 - 21

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(19) $\frac{x}{3} + \frac{3x}{4}$ $\quad 12 \quad + \quad 12$

(20) $\frac{3x}{5} + \frac{x}{2}$ $\quad 10 \quad + \quad 10$

(21) $\frac{4x}{3} - \frac{x}{2}$ $\quad 6 \quad - \quad 6$

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Algebra 2 – Section 4.4

Add and Subtract Rational Expressions

Zap Zap

NO Equal Signs

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EXAMPLE 1 **Add or subtract with like**

Perform the indicated operation.

Since it is subtraction, add opp before you start

a. $\frac{7}{4x} + \frac{3}{4x} = \frac{10}{4x} = \frac{5}{2x}$ (÷2 ÷2)

b. $\frac{2x}{x+6} - \frac{5}{x+6} = \frac{2x-5}{x+6}$

$x = 5$

a. $\frac{7}{12x} + \frac{5}{12x} = \frac{12}{12x} = \frac{1}{x}$ (12÷12, ·12 ·12)

b. $\frac{2}{3x^2} + \frac{1}{3x^2} = \frac{3}{3x^2} = \frac{1}{x^2}$

c. $\frac{4x}{x-2} - \frac{x}{x-2} = \frac{3x}{x-2} = 5$ (15/3)

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Adding and Subtracting Rational Expressions

- You must have a common denominator
- To find a common denominator, you must factor all the denominators (if possible)
- The common denominator must contain **all** the factors in the denominators
- 1) Find the least common multiple of the constant Numbers
- 2) Find the largest exponent on the variables
- 3) Find all binomials- largest exponent if same
-
- ***WATCH for binomials that have to make the numerator NEGATIVE to flip** (x - 4) & (4 - x)

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(25) $\frac{1}{5x+10} + \frac{3}{(x+2)} \Rightarrow \frac{\quad}{5(x+2)} + \frac{\quad}{5(x+2)}$

$\frac{1}{5} \cdot \frac{5}{5}$ $\quad 5(x+2)$

(27) $\frac{7}{(x-1)} + \frac{2}{3x-3} \Rightarrow \frac{\quad}{3(x-1)} + \frac{\quad}{3(x-1)}$

$\frac{2}{3} \cdot \frac{3}{3}$ $\quad 3(x-1)$

(22) $\frac{4}{2x} - \frac{3}{x} \quad \frac{\quad}{2x} - \frac{\quad}{2x}$

(26) $\frac{6}{(x+2)} - \frac{1}{(x+3)} \Rightarrow \frac{\quad}{(x+2)(x+3)} - \frac{\quad}{(x+2)(x+3)}$

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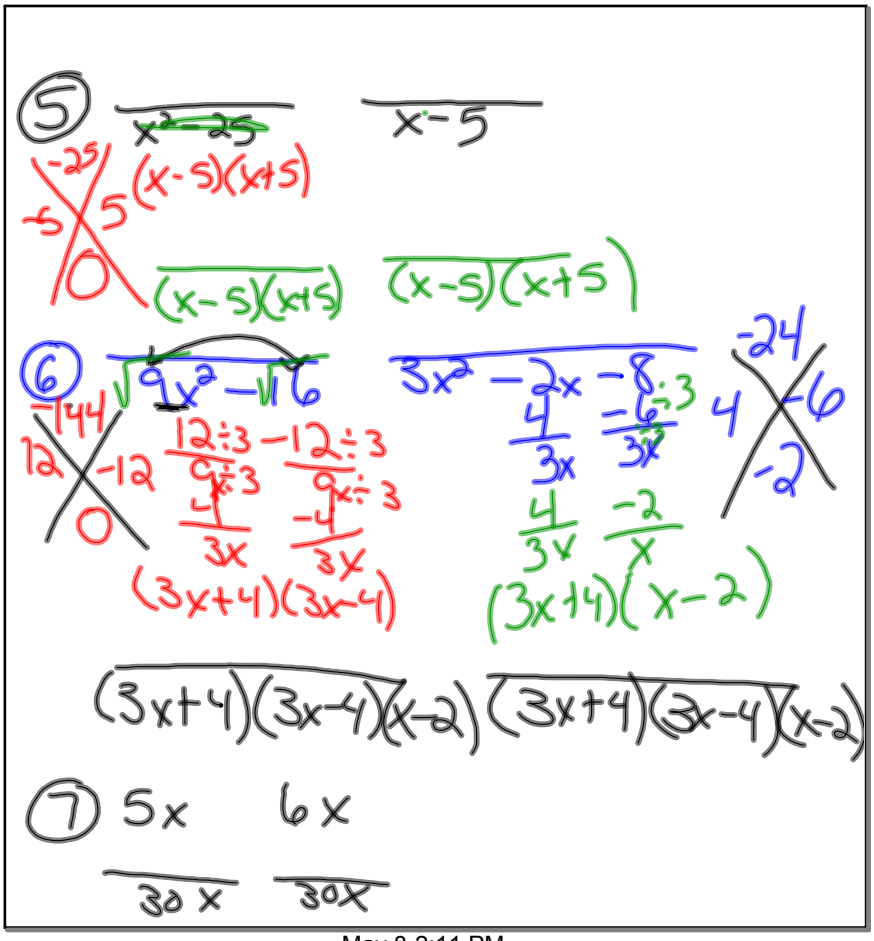

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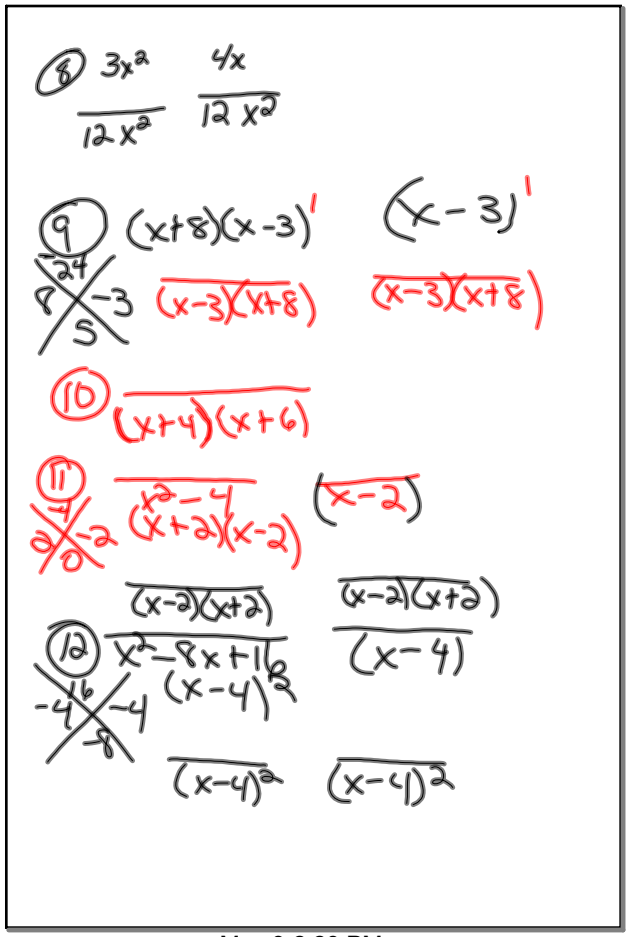

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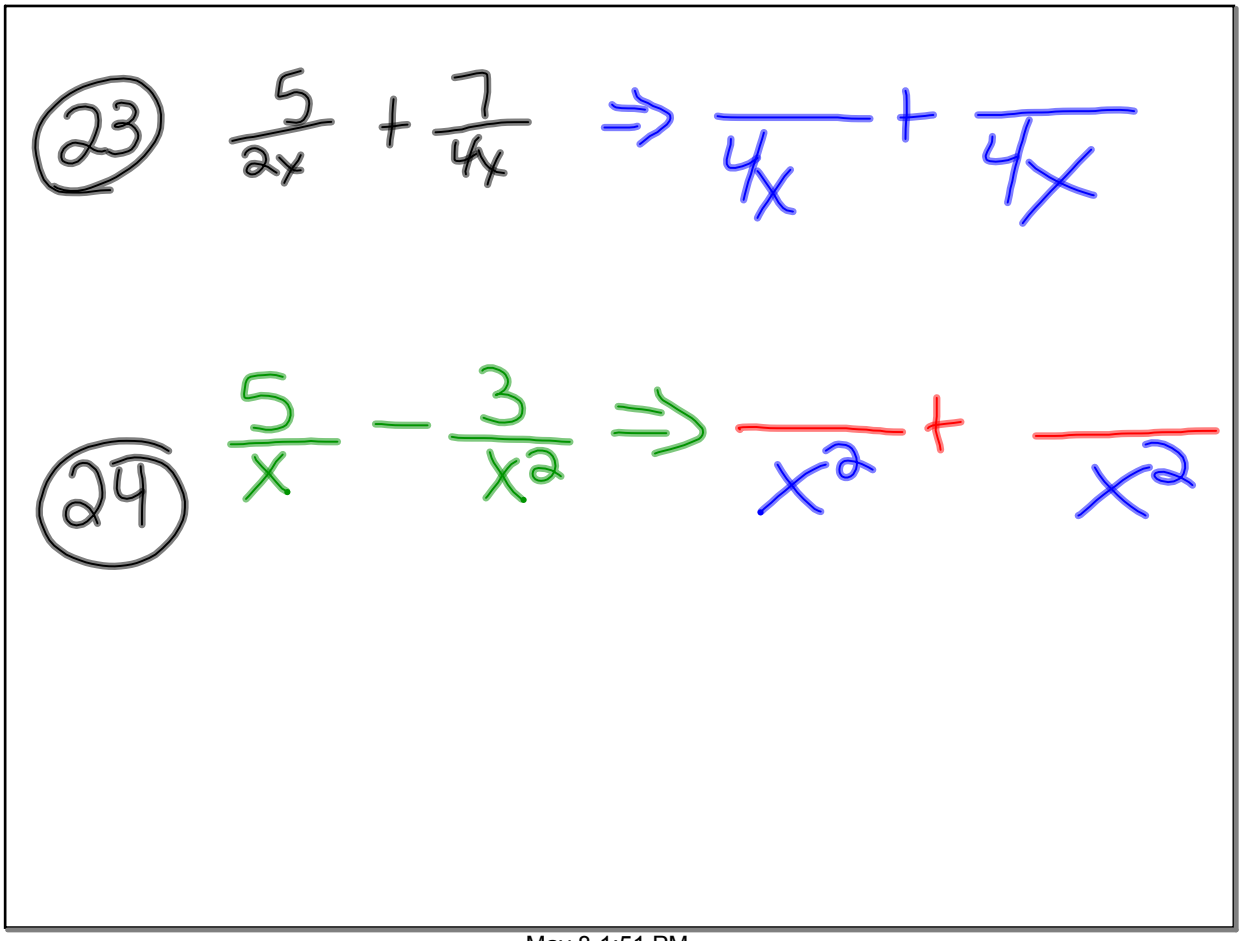

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Adding and Subtracting Rational Expressions

- **Rewrite the fractions** over the new comm denominator
- Multiply the numerators by the same thing the denominators were multiplied by to get the commo denominator
- Add or Subtract the numerators, remember the **denominators stay the same**
- Now factor the top of the new fraction
- Look for common terms, then use the X to factor
- Cancel any common factors between the to and bottom

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GUIDED PRACTICE

7. $\frac{3}{4x} - \frac{1}{7}$

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8. $\frac{1}{3x^2} + \frac{x}{9x^2 - 12x}$

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GUIDED PRACTICE

9. $\dfrac{x}{x^2 - x - 12} + \dfrac{5}{12x - 48}$

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GUIDED PRACTICE

10. $\dfrac{x + 1}{x^2 + 4x + 4} - \dfrac{6}{x^2 - 4}$

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