

NO CALCULATOR. Show all work and your final answer in the space provided.

Be NEAT and CLEAR with your answers.

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1. Multiply $\frac{3x(x+5)}{8(x+4)} \cdot \frac{10(x+4)(x-3)}{x^4(x+5)^2}$ and express your final answer in factored form.

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2. Divide $\frac{5x^2 + 20x}{x^3 - 9x} \div \frac{5x^2 + 15x - 20}{2x^2 + 5x - 3}$; express your answer in reduced, factored form.

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3. Before determining the LCD, what must be done to the denominator? _____

4. State the LCD for $\frac{1}{(x+2)^2} + \frac{1}{(x+2)^3} + \frac{1}{(x+2)(x-3)}$; LCD =

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5. Add (a) $\frac{2}{x+1} + \frac{1}{x}$

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(b) $\frac{1}{(x+2)^2} + \frac{1}{(x+2)(x-3)}$

6. Subtract: $\frac{1}{x^2 - 9} - \frac{1}{x^2 + 5x + 6}$

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7. For the equation $\frac{4}{x+3} = \frac{10}{2x-1} + 3$

- a) What is the LCD?
b) Multiply the entire equation by its LCD and write the equation that results (there should not be a denominator in this equation!).
c) Continue to solve for x .
d) Verify your solution.
- } Parts (c) and (d) are BONUS.

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8. Solve for x and verify your solution:

a) $\frac{4}{3x+3} = \frac{12}{x^2-1}$

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

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