Ch 4B Practice Test

Simply the following as much as possible.

1.
$$\frac{3x^3 - x^2}{x^2 - 2x - 15} \cdot \frac{x^2 - x - 20}{6x^4 - 2x^3}$$

3.
$$\frac{x^2-36}{x^2+3x-18} = \frac{(X-6)(X+6)}{(X+6)(X-3)}$$

$$\left(\begin{array}{c} \cancel{X+3} \\ \cancel{X+3} \end{array}\right) \cdot \frac{10}{x-2} + \frac{x}{x+3} \left(\begin{array}{c} \cancel{X-2} \\ \cancel{X-2} \end{array}\right)$$

$$\frac{10x+30+x^2-2x}{(x+3)(x-2)}$$

$$\frac{x^2 + 8x + 30}{(x+3)(x-2)}$$

7.
$$\frac{9x^3 + 54x^2}{x^2 + 5x - 14} \cdot \frac{x^2 + 6x - 7}{12x^2}$$

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

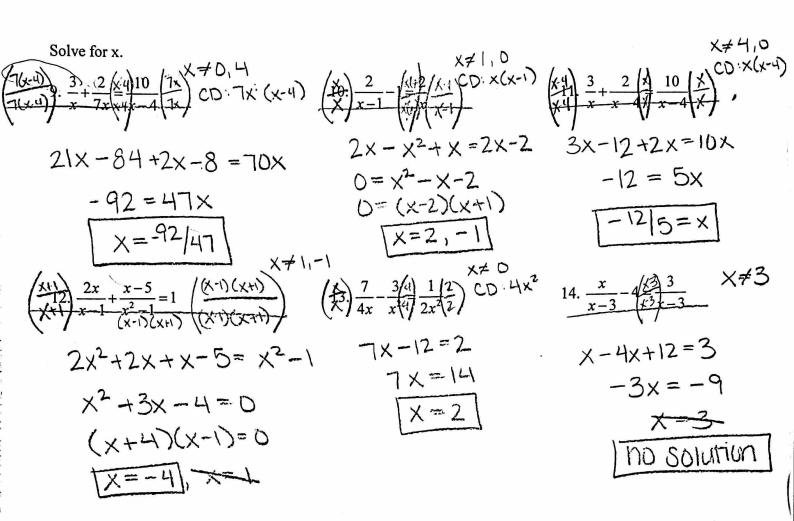
4.
$$\frac{y^2-16}{y^2-10y+25} \div \frac{3y-12}{y^2-3y-10}$$

6.
$$\frac{3-4x}{x^2+3x-10} - \frac{x+2}{x+5} \left(\frac{\cancel{x}-\cancel{2}}{\cancel{x}-\cancel{2}} \right)$$

$$\frac{3-4x-(x^2-4)}{(x+5)(x-2)}$$

$$\left(\frac{x-2}{x-2}\right)^{3} \cdot \frac{7}{3x^{2}-6x} - \frac{x^{2}}{x^{2}-4x+4} \cdot \left(\frac{3x}{3x}\right)^{3} \times (x-2)^{3} \cdot \left(\frac{3x}{3x}\right)^{3}$$

$$-3x^3+7x-14$$
 $3x(x-2)(x-2)$



15. John can fix 4 computers in 5 hours and Jennifer can fix 3 computers in 2 hours, how long would it take for them to work together to fix 1 computer? $\times \neq 0$ $\otimes \times +15 \times = 10$

$$8x + 15x = 10$$

 $23x = 10$
 $x = \frac{10}{23}$
 $x = 0.4 \text{ hrs}$

16. While practicing for the next big soccer game you have made 6 of the 11 shots you have taken. You will be able to go home once you reach at least 80%. How many more consecutive shots would you need to make before you leave?

$$100(0+x)=80(11+x)$$
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17. The time it takes for a canoe to go 3 miles upstream and back 3 miles downstream is 4 hours. The current in the lake is 1 mile per hour. Find the average speed (rate) of the canoe in still water. $\times \neq -1$,

down
$$\frac{3}{3} \times 1 \times 1 = \frac{3}{3} \times 1 = \frac{3}{3}$$

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

$$3x = 3 + 3x + 3 = 4x^{2}-4$$

$$0 = 4x^{2} - 6x - 4$$

$$0 = 2(2x^{2}-3x-2)$$

$$0 = 2(2x+1)(x-2)$$