Section 7.3 Focus Exercises

1. For each fraction, identify the value(s) that x cannot be. Write your answers as $x \neq c$.

a) $\dfrac{x-7}{x+4}$

b) $\dfrac{3x+6}{2x-6}$

c) $\dfrac{2x+5}{x^2+8x-20}$

d) $\dfrac{3x-1}{3x^2+10x+8}$

2. Solve each equation by first identifying the LCD and clearing the fractions. Check your answer to show that it is a solution.

a) $1 - \dfrac{5}{x} = \dfrac{6}{x^2}$

b) $\dfrac{1}{x^2} + \dfrac{1}{6x} = \dfrac{1}{2} - \dfrac{1}{3x}$

c) $\dfrac{3}{x^2} - \dfrac{1}{x} = \dfrac{1}{4}$

d) $\dfrac{x}{4} + \dfrac{1}{x} = \dfrac{5}{4} - \dfrac{1}{2x}$

3. Solve each equation by first identifying the LCD and then clearing the fractions. **Be sure to note the values that will make a denominator 0**. Check your answers to show they are solutions.

a) $\frac{1}{2x} + \frac{1}{x} = \frac{1}{x-1}$

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

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

d) $\frac{3}{x^2 + 2x} + \frac{4}{x+2} = 1$

4. Solve each equation by first identifying the LCD and then clearing the fractions. **Be sure to note the values that will make a denominator 0**. Check your answers to show they are solutions.

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

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

c) $\frac{6}{x-3} = 2 + \frac{10}{x^2-3x}$

d) $x + \frac{8}{x-4} = \frac{x+4}{x-4} + 1$