

$$\cancel{1} \left(\frac{x-1}{x+2} \right) < \left(\frac{3}{1} \right) \cancel{x+2} \quad \text{LCD: } x+2$$

$$x-1 < 3(x+2) \quad \text{and } x+2 > 0$$

$$\begin{array}{r} x-1 < 3x+6 \\ -3x+1 \quad -3x+1 \\ \hline -2x < 7 \\ \frac{-2x}{-2} < \frac{7}{-2} \end{array}$$

$$\boxed{x > -\frac{7}{2} \text{ and } x > -2}$$

$$\begin{array}{r} x-1 > 3(x+2) \quad \text{and } x+2 < 0 \\ -3x+1 \quad -3x+1 \\ \hline -2x > 7 \\ \frac{-2x}{-2} > \frac{7}{-2} \end{array}$$

$$\boxed{x < -\frac{7}{2} \text{ and } x < -2}$$

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$$\cancel{1} \left(\frac{4x}{x-3} \right) < \left(\frac{6}{1} \right) \cancel{x-3} \quad \text{LCD: } (x-3)$$

$$4x \leq 6x-18 \quad \text{and } x-3 > 0$$

$$\begin{array}{r} 4x \leq 6x-18 \\ -6x \quad -6x \\ \hline -2x \leq -18 \\ \frac{-2x}{-2} \leq \frac{-18}{-2} \end{array}$$

$$\boxed{x \geq 9 \text{ and } x > 3}$$

$$\begin{array}{r} 4x \geq 6x-18 \quad \text{and } x-3 < 0 \\ -6x \quad -6x \\ \hline -2x \geq -18 \\ \frac{-2x}{-2} \geq \frac{-18}{-2} \end{array}$$

$$\boxed{x \leq 9 \text{ and } x < 3}$$

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