

Practice 9.6 (SLOT Practice)

16. LCM: $x-2$

$$\frac{(x-2)}{1} \cdot \frac{x}{1} + \frac{(x-2)}{1} \cdot \frac{10}{(x-2)} = \frac{x^2+3x}{x-2} \cdot \frac{x-2}{1}$$

$$\begin{aligned} x(x-2) + 10 &= x^2 + 3x \\ x^2 - 2x + 10 &= x^2 + 3x \\ -x^2 - 3x &\quad -x^2 - 3x \\ \hline -5x + 10 &= 0 \end{aligned}$$

$$\begin{aligned} -5x &= -10 \\ \underline{-5} &\quad x=2 \\ \text{NO SOLUTION} \end{aligned}$$

18. LCM: $2(x+1)(x-1)$

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

$$x-1 + 2 \cdot 5 = 2(x+1)$$

$$x-1 + 10 = 2x+2$$

$$x+9 = 2x+2$$

$$\begin{aligned} -x &\quad -x \\ \hline 9 &= x+2 \\ -2 &\quad -2 \\ \hline \end{aligned}$$

$$x=7$$

23. LCM: $(x-2)(x+2)$

$$\frac{(x+2)(x-2)}{1} \cdot \frac{2}{x+2} + \frac{(x+2)(x-2)}{1} \cdot \frac{5}{x-2} = \frac{(x+2)(x-2)}{1} \cdot \frac{6}{(x-2)(x+2)}$$

$$2(x-2) + 5(x+2) = 6$$

$$2x-4+5x+10=6$$

$$7x+6=6$$

$$7x=0$$

$$x=0$$