

1) $\frac{7(x-2)}{2} - \frac{4}{7} = \frac{3x}{x-2}$ LCD $7(x-2)$

$$14(x-2) - 4(x-2) = 7 \cdot 3x$$

$$14x - 28 - 4x + 8 = 21x$$

$$10x - 20 = 21x$$

$$\begin{array}{r} -10x \\ \hline -20 = 11x \end{array}$$

$$\frac{-20}{11} = \frac{11x}{11}$$

$$\frac{-20}{11} = x$$

4) $\frac{5}{6} = \frac{3x}{2x-7}$ LCD $6(2x-7)$

$$5(2x-7) = 6 \cdot 3x$$

$$10x - 35 = 18x$$

$$\begin{array}{r} -10x \\ \hline -35 = 8x \end{array}$$

$$\frac{-35}{8} = \frac{8x}{8}$$

$$\frac{-35}{8} = x$$

7) $\frac{2}{3a} = \frac{1}{a} + \frac{4}{5}$ LCD $15a$

$$10 = 15 + 12a$$

$$\begin{array}{r} -15 \\ \hline -5 = 12a \end{array}$$

$$\frac{-5}{12} = \frac{12a}{12}$$

$$\frac{-5}{12} = a$$

2) $\frac{r}{r-4} = \frac{2}{3}$ LCD $3(r-4)$

$$3r = 2(r-4)$$

$$3r = 2r - 8$$

$$\begin{array}{r} -2r \\ \hline r = -8 \end{array}$$

6) (don't need LCD)

$$\frac{5}{6} = \frac{r}{12}$$

$$10 = r$$

10) $\frac{y}{18} = \frac{7}{9}$ LCD 18

$$y = 14$$

3) (Hint: You don't need LCD for this one.)

$$\frac{x}{8} = \frac{7}{10}$$

$$x = \frac{28}{5}$$

7) $\frac{y+2}{2y-3} + \frac{2}{3} = \frac{1}{2}$ LCD $6(2y-3)$

$$6(y+2) + 4(2y-3) = 3(2y-3)$$

$$6y + 12 + 8y - 12 = 6y - 9$$

$$14y = 6y - 9$$

$$\begin{array}{r} -6y \\ \hline 8y = -9 \end{array}$$

$$\frac{8y}{8} = \frac{-9}{8}$$

$$y = -\frac{9}{8}$$

11) $\frac{x-3}{4} = \frac{7x}{10} - \frac{1}{2}$ LCD 20

$$5(x-3) = 14x - 10$$

$$5x - 15 = 14x - 10$$

$$\begin{array}{r} -5x \\ \hline -15 = 9x - 10 \end{array}$$

$$\begin{array}{r} +10 \\ \hline -5 = 9x \end{array}$$

$$\frac{-5}{9} = \frac{9x}{9}$$

$$\frac{-5}{9} = x$$

4) $\frac{5k}{6} = \frac{7}{12} - 2$ LCD 12

$$10k = 7 - 24$$

$$\frac{10k}{10} = \frac{-17}{10}$$

$$k = -\frac{17}{10}$$

8) (don't need LCD)

$$x \cdot 5 = \frac{x+3}{x}$$

$$5x = x + 3$$

$$\begin{array}{r} -x \\ \hline 4x = 3 \end{array}$$

$$\frac{4x}{4} = \frac{3}{4}$$

$$x = \frac{3}{4}$$

12) $\frac{2}{3y} = \frac{7}{2y-5}$ LCD $3y(2y-5)$

$$2(2y-5) = 7 \cdot 3y$$

$$4y - 10 = 21y$$

$$\begin{array}{r} -4y \\ \hline -10 = 17y \end{array}$$

$$\frac{-10}{17} = \frac{17y}{17}$$

$$\frac{-10}{17} = y$$