Bell work:

$$\frac{y}{4y+8} - \frac{1}{y^2+2y}$$

$LCD = 4y(y+2)$

$$(y)\frac{y}{4(y+2)} - \frac{1}{y(y+2)}(4)$$

$$\frac{y^2}{4y(y+2)} - \frac{4}{4y(y+2)}$$

$$\frac{y^2-4}{4y(y+2)} = \frac{(y+2)(y-2)}{4y(y+2)} = \frac{y-2}{4y}$$

$y \neq -2, 0$

Solve each equation. Check each solution.

1) $-\frac{4}{x+1}=\frac{5}{3x+1}$

$-4(3x+1)=5(x+1)$

$-12x-4=5x+5$

$-5 \quad +12x$

$-9=17x$

$x=-\frac{9}{17}$

2) $\frac{3x}{4}=\frac{5x+1}{3}$

$3(3x)=4(5x+1)$

$9x=20x+4$

$-11x=4$

$x=\frac{4}{-11}$

3) $\frac{x-4}{3}=\frac{x-2}{2}$

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

$2x-8=3x-6$

$-2=x$

LCD = 6

4) $\left(\frac{x}{3}+\frac{x}{2}=10\right)\frac{6}{1}$

$\frac{6x}{3}+\frac{6x}{2}=60$

$2x+3x=60$

$5x=60$

$x=12$

LCD = 30

5) $\left(\frac{2y}{5}+\frac{2}{6}=\frac{y}{2}-\frac{1}{6}\right)30$

$\frac{60y}{5}+\frac{60}{6}=\frac{30y}{2}-\frac{30}{6}$

$12y+10=15y-5$

$+5 \quad -12y$

$15=3y$

$y=5$

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

$\frac{10}{5}+\frac{2}{6}=\frac{5}{2}-\frac{1}{6}$

$\frac{60}{30}+\frac{10}{30}=\frac{75}{30}-\frac{5}{30}$

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

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

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

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

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

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

$x+9=2x+2$

$-2 \quad -x$

$7=x$

$\frac{1}{16}+\frac{5}{48}=\frac{1}{6}$

$\frac{3}{48}+\frac{5}{48}=\frac{8}{48}$

7) $\frac{2}{x+3}+\frac{5}{3-x}=\frac{6}{x^2-9}$

LCD: $(x-3)(x+3)$

$\frac{2}{x+3}-\frac{5}{x-3}=\frac{6}{(x+3)(x-3)}$

$2(x-3)-5(x+3)=6$

$2x-6-5x-15=6$

$-3x-21=6$

$-3x=27$

$-3 \quad -3$

$x=-9$

$\frac{2}{-6}+\frac{5}{12}=\frac{6}{72}$

$\frac{-24}{72}+\frac{30}{72}=\frac{6}{72}$