6.2 Adding / Subtracting rational expressions

lcd's

$\frac{2}{3}+\frac{3}{4}$ $\qquad \frac{2}{3}=\frac{8}{12}$ $\qquad \frac{3}{4}=\frac{9}{12}$

$\frac{8}{12}+\frac{9}{12}=\frac{8+9}{12}=\frac{17}{12}$

14, 32, 48

LCD 12 $\quad \frac{2}{3}+\frac{3}{4}$ $\qquad$ lcd 48 $\quad \frac{3}{16}+\frac{5}{12}=\frac{9+20}{48}=\frac{29}{48}$

LCD $(x+2)(x-3)(x+4)$

$$\frac{5}{(x+2)(x-3)}+\frac{3}{(x-3)(x+4)}$$

$$\frac{5(x+4)+3(x+2)}{(x+2)(x-3)(x+4)}$$ NO!

$$\frac{5(x+4)+3(x+2)}{LCD}$$

$$=\frac{5x+20+3x+6}{LCD}$$

$$=\frac{8x+26}{LCD}$$

$$=\frac{2(4x+13)}{(x+2)(x-3)(x+4)}$$

$4(x-3)^2(x+2)^4$

$6(x-3)^8(x-2)^5$

$12(x+3)^5(x-7)$

$30(x-3)^{12}(x+2)^8(x-1)^5$

$LCD = 60(x-3)^{12}(x+2)^8(x-2)^5(x+3)^5(x-7)(x-1)^5$

LCD: $(x+2)(x-2)$

$$\frac{3}{x^2-4} - \frac{2}{x+2}$$

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

$$= \frac{3-2(x-2)}{lcd}$$

$$= \frac{3-2x+4}{lcd}$$

$$= \frac{-2x+7}{lcd}$$

$$= \frac{-2x+7}{(x+2)(x-2)}$$