

# Rational Expression Worksheet

## Adding/Subtracting

Add or subtract these rational expressions. Show your common denominators and numerators on this sheet or separate paper. **FACTOR** denominators when possible.

$$1. \quad \begin{array}{c} \times \\ \times \end{array} \frac{5}{8} - \frac{3}{8x}$$

LCD:  $8x$

$$\frac{5x}{8x} - \frac{3}{8x} = \boxed{\frac{5x-3}{8x}}$$

$$2. \quad \frac{2}{4x+12} + \frac{7}{x+3} \begin{array}{c} 4 \\ 4 \end{array}$$

LCD:  $4(x+3)$

$$\frac{2}{4(x+3)} + \frac{28}{4(x+3)} = \frac{30}{4(x+3)} = \boxed{\frac{15}{2(x+3)}}$$

$$3. \quad \frac{(x-5)7}{(x-5)x+2} - \frac{4}{x-5} \frac{(x+2)}{(x+2)}$$

LCD:  $(x+2)(x-5)$

$$\frac{7x-35}{(x-5)(x+2)} - \frac{4x+8}{(x-5)(x+2)}$$

$$\boxed{\frac{3x-43}{(x-5)(x+2)}}$$

$$4. \quad \frac{(y+2)3}{(y+2)y+5} + \frac{y}{y^2+7y+10}$$

LCD:  $(y+5)(y+2)$

$$\frac{3(y+2)}{(y+5)(y+2)} + \frac{y}{(y+5)(y+2)}$$

$$\frac{4y+6}{(y+5)(y+2)} = \boxed{\frac{2(2y+3)}{(y+5)(y+2)}}$$

$$5. \quad \frac{5}{4x} + \frac{3}{2x} \begin{array}{c} 2 \\ 2 \end{array}$$

LCD:  $4x$

$$\frac{5}{4x} + \frac{6}{4x} = \boxed{\frac{11}{4x}}$$

$$6. \quad \frac{(x+7)2}{(x+7)x-3} - \frac{1}{x+7} \frac{(x-3)}{(x-3)}$$

LCD:  $(x-3)(x+7)$

$$\frac{2x+14}{(x+7)(x-3)} - \frac{x-3}{(x+7)(x-3)} = \boxed{\frac{x+17}{(x+7)(x-3)}}$$