Name Key

Rational Expression Worksheet #7: 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. $\frac{7}{3x} - \frac{2}{5}$ $x \neq 0$

$\frac{35 - 6x}{15x}$

2. $\frac{3}{2x+6} + \frac{4}{6x+18}$ $x \neq -3$

$\frac{3}{2(x+3)} + \frac{4}{6(x+3)}$

$\frac{9+4}{6(x+3)} = \frac{13}{6(x+3)}$

3. $\frac{3}{x+2} + \frac{4}{x-7}$ $x \neq -2, 7$

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

$\frac{3x-21+4x+8}{(x+2)(x-7)} = \frac{7x-13}{(x+2)(x-7)}$

4. $\frac{1}{y+3} + \frac{4}{y^2+4y+3}$ $y \neq -3, -1$

$\frac{1}{y+3} + \frac{4}{(y+1)(y+3)}$

$\frac{y+1+4}{(y+1)(y+3)} = \frac{y+5}{(y+1)(y+3)}$

5. $\frac{2}{5x} - \frac{3}{10x}$ $x \neq 0$

$\frac{4-3}{10x} = \frac{1}{10x}$

6. $\frac{2x+3}{5x-30} - \frac{3x+4}{x-6}$ $x \neq 6$

$\frac{2x+3}{5(x-6)} - \frac{3x+4}{x-6}$

$\frac{2x+3-5(3x+4)}{5(x-6)}$

$\frac{2x+3-15x-20}{5(x-6)}$

$\frac{-13x-17}{5(x-6)}$

7. $\frac{2x}{x-11} + \frac{5}{x-11}$ $x \neq 11$

$\frac{2x+5}{x-11}$

8. $\frac{6x-7}{x^2+6x+5} + \frac{4}{x+5}$ $x \neq -1, -5$

$\frac{6x-7}{(x+5)(x+1)} + \frac{4}{x+5}$

$\frac{6x-7+4(x+1)}{(x+5)(x+1)}$

$\frac{6x-7+4x+4}{(x+5)(x+1)}$

$\frac{10x-3}{(x+5)(x+1)}$