

Rational Expression Worksheet #12: 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. $\left(\frac{5}{5}\right) \frac{7}{3x} - \frac{2}{5} \left(\frac{3x}{3x}\right)$

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

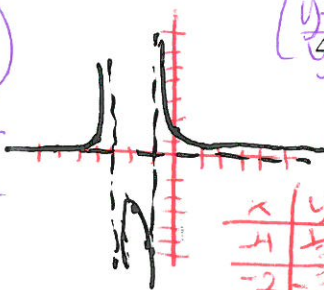
2. $\left(\frac{3}{3}\right) \frac{3}{2x+6} + \frac{4}{6x+18}$

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

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

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

$$\frac{7x-13}{(x-7)(x+2)}$$



$\left(\frac{y+1}{y+1}\right) \frac{1}{y+3} + \frac{4}{y^2+4y+3}$

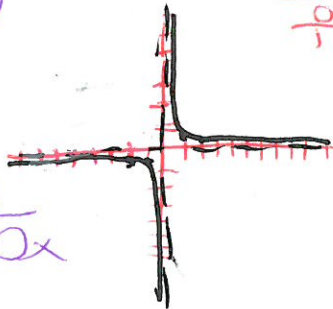
$$\frac{y+1+4}{(y+1)(y+3)} = \frac{y+5}{(y+1)(y+3)}$$

D: (-5, 3) U (-3, -1) U (-1, ∞)
 VA: x = -1, x = -3
 HA: y = 0
 No Holes

x	y
-4	1/3
-2	-3
-1.5	-2/3
0	3/3
1	3/4

5. $\left(\frac{2}{2}\right) \frac{2}{5x} - \frac{3}{10x}$

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



6. $\frac{2x+3}{5x-30} - \frac{3x+4}{x-6} \left(\frac{5}{5}\right)$

$$\frac{2x+3-15x-20}{5(x-6)} = \frac{-13x-17}{5(x-6)}$$

x	y
-2	1/50
-1	-1/50
1	1/50
2	1/50

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

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

8. $\frac{6x-7}{x^2+6x+5} + \frac{4}{x+5} \left(\frac{x+1}{x+1}\right)$

$$\frac{6x-7+4x+4}{(x+5)(x+1)} = \frac{10x-3}{(x+5)(x+1)}$$