

Algebra II

5-6

Sums and Differences

Rules for Fractions

- 1) When multiplying fractions, multiply the tops,
multiply the bottoms.
- 2) When dividing fractions, multiply by the reciprocal.
(only Flip the term after the \div)
- 3) When adding and subtracting fractions,
Need: Common Denominator.
Add the tops, the bottom stays the same.

Simplify.

$$\begin{aligned} 3) \quad & \frac{1}{2} - \frac{3}{7} + \frac{5}{14} \\ & \frac{7}{14} - \frac{6}{14} + \frac{5}{14} \\ & \frac{6}{14} \\ & \frac{3}{7} \end{aligned}$$

$$\begin{aligned} 7) \quad & \frac{2(t+2)}{2 \cdot 3} + \frac{t-4}{6} \\ & \frac{2(t+2)}{6} + \frac{t-4}{6} \\ & \frac{2t+4+t-4}{6} \\ & \frac{3t}{6} \\ & \frac{t}{2} \end{aligned}$$

$$\begin{aligned}
 13) \quad & \frac{p^2 \cdot 1}{p^2 \cdot 2pq^4} + \frac{2 \cdot 2q^2}{p^3q^2 \cdot 2q^2} \\
 & \frac{p^2 \cdot 1}{2p^3q^4} + \frac{2 \cdot 2q^2}{2p^3q^4} \\
 & \frac{p^2 + 4q^2}{2p^3q^4}
 \end{aligned}$$

$$\begin{aligned}
 23) \quad & \frac{1}{t^2+t} + \frac{1}{t^2-t} \\
 & \frac{(t-1)}{(t-1) \cdot t(t+1)} + \frac{1 \cdot (t+1)}{t(t-1)(t+1)} \\
 & \frac{(t-1) + (t+1)}{t(t+1)(t-1)} \\
 & \frac{2t}{\cancel{t}(t+1)(t-1)} \\
 & \frac{2}{(t+1)(t-1)}
 \end{aligned}$$

$$31) (x-y)^{-1} - (x+y)^{-1}$$

$$\frac{(x+y) \cdot 1}{(x+y)(x-y)} - \frac{1 \cdot (x-y)}{(x+y)(x-y)}$$

$$\frac{(x+y) - (x-y)}{(x-y)(x+y)}$$

$$\frac{\cancel{x}+y - \cancel{x}+y}{(x-y)(x+y)}$$

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

$$29) \frac{a+b}{a-b} + \frac{a-b}{a+b} + \frac{b-a}{a-b} + \frac{b-a}{a+b}$$

$$\frac{a+b+b-a}{a-b} + \frac{a-b+b-a}{a+b}$$

$$\frac{2b}{a-b} + 0$$

$$\frac{2b}{a-b}$$

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