

TOPIC: ADDING AND SUBTRACTING RATIONAL EXPRESSIONS WITH THE SAME DENOMINATOR

Adding and Subtracting Rational Expressions with Like Denominators

◆ Recall: We can + or – fractions w/ like denominators by combining numerators & keeping the **same** denominator.

Recall	+ or – Rational <i>Numbers</i>	New	+ or – Rational <i>Expressions</i>
	$\frac{5}{18} + \frac{1}{18}$ Combine numerators: $\frac{5+1}{18} = \frac{6}{18}$ Simplify: $\frac{6}{18} = \frac{\cancel{3} \cdot \cancel{2}}{\cancel{3} \cdot 3 \cdot \cancel{2}} = \frac{1}{3}$		$\frac{5}{18x} + \frac{1}{18x}$ Combine numerators: Simplify:

◆ When subtracting, remember to _____ the negative sign to ALL terms of the numerator of the 2nd fraction.

EXAMPLE Add or subtract the rational expressions and simplify.

$$\frac{x^2}{x-1} - \frac{-x+2}{x-1}$$

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PRACTICE

Add the following and simplify the sum if possible.

(A) $\frac{x+1}{3x} + \frac{2x-1}{3x}$

(B) $\frac{x^2-4}{x^2-x-6} + \frac{x+2}{x^2-x-6}$

PRACTICE

Subtract the following and simplify the difference if possible.

(A) $\frac{x+5}{4x} - \frac{2x-1}{4x}$

(B) $\frac{x^2-4}{x^2-x-6} - \frac{x+2}{x^2-x-6}$

EXAMPLE

Perform the indicated operation and write the resulting expression in its simplest form.

$$\frac{2y^2 + 7y + 2}{2y - 5} - \frac{10y - 7}{2y - 5} + \frac{4y^2}{2y - 5}$$