

Adding and Subtracting Rational Expressions - Guided Lesson Explanation

Explanation#1

To subtract rational expressions with common denominators, subtract the numerators.

The expressions have a common denominator, so you can subtract the numerator.

$$\frac{10}{w^5} - \frac{6}{w^5} = \frac{10 - 6}{w^5} = \frac{10 - 6}{w^5} = \frac{4}{w^5}$$

So the answer is $\frac{4}{w^5}$

Explanation#2

To add rational expressions with common denominators, add the numerators. The first thing we must do is to find common denominators for the expressions. The least common multiple (LCM) of 5 and 6 is 30. Rewrite each expression with a denominator of 30.

$$\frac{7k}{5} + \frac{4k}{6}$$

$$\left(\frac{7k}{5} \times \frac{6}{6}\right) + \left(\frac{4k}{6} \times \frac{5}{5}\right)$$

$$\frac{42k}{30} + \frac{20k}{30}$$

Now that the expressions have a common denominator, you can add the numerator.

$$\frac{42k + 20k}{30}$$

We can further reduce the fraction.

Answer is: $\frac{31k}{15}$



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Explanation#3

To subtract rational expressions with common denominators, subtract the numerators. The expressions have a common denominator, so you can subtract the numerator.

$$\frac{7}{h^6} - \frac{5}{h^6} =$$

$$\frac{7}{h^6} - \frac{5}{h^6} = \frac{7 - 5}{h^6} = \frac{2}{h^6} = \frac{2}{h^6}$$

So the answer is $\frac{2}{h^6}$

