

Adding and Subtracting Rational Expressions Bell Work

Add or subtract the following rational expressions with the same denominator.

1. $\frac{x}{2} - \frac{3}{2}$

2. $\frac{y}{7} - \frac{5}{7}$

3. $\frac{x}{3} - \frac{2y}{3} + \frac{z}{3}$

4. $\frac{m-n}{4} - \frac{m+n}{4}$

5. $\frac{3a}{a-5} + \frac{-12}{a-5}$

Add or subtract the rational expressions with different denominator.

6. $5 - \frac{1}{x}$

7. $\frac{1}{x} - \frac{2}{x^2} + \frac{3}{x^3}$

8. $\frac{5}{c} - \frac{c}{c-7}$

9. $\frac{16}{4p^2} - \frac{4}{p}$

10. $\frac{6-4p}{8} - \frac{3-3p}{6}$

Adding and Subtracting Rational Expressions Bell Work

Answer: Add or subtract the following rational expressions with the same denominator.

1. $\frac{x}{2} - \frac{3}{2}$

Solution:

$$\frac{x}{2} - \frac{3}{2} = \frac{x-3}{2}$$

3. $\frac{x}{3} - \frac{2y}{3} + \frac{z}{3}$

Solution:

$$\frac{x}{3} - \frac{2y}{3} + \frac{z}{3} = \frac{x-2y+z}{3}$$

5. $\frac{3a}{a-5} + \frac{-12}{a-5}$

Solution:

$$\frac{3a}{a-5} + \frac{-12}{a-5} = \frac{3a-12}{a-5}$$

2. $\frac{y}{7} - \frac{5}{7}$

Solution:

$$\frac{y}{7} - \frac{5}{7} = \frac{y-5}{7}$$

4. $\frac{m-n}{4} - \frac{m+n}{4}$

Solution:

$$\frac{m-n}{4} - \frac{m+n}{4} = \frac{m-n-m-n}{4} = \frac{-n}{4}$$

Add or subtract the rational expressions with different denominator.

6. $5 - \frac{1}{x}$

Solution:

LCD: x

$$5 - \frac{1}{x} = \frac{5(x)-1}{x} = \frac{5x-1}{x}$$

8. $\frac{5}{c} - \frac{c}{c-7}$

Solution:

LCD: $c(c-7) = c^2 - 7c$

$$\frac{5}{c} - \frac{c}{c-7} = \frac{5(c-7)-c(c)}{c^2-7c} = \frac{5c-35-c^2}{c^2-7c}$$

$$= \frac{-c^2+5c-35}{c^2-7c}$$

10. $\frac{6-4p}{8} - \frac{3-3p}{6}$

Solution:

LCD: 24

$$\frac{6-4p}{8} - \frac{3-3p}{6} = \frac{(6-4p)(3)-(3-3p)(4)}{24}$$

$$= \frac{18-12p-12+12p}{24} = \frac{6}{24} = \frac{1}{4}$$

7. $\frac{1}{x} - \frac{2}{x^2} + \frac{3}{x^3}$

Solution:

LCD: x^3

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

9. $\frac{16}{4p^2} - \frac{4}{p}$

Solution:

LCD: $4p^2$

$$\frac{16}{4p^2} - \frac{4}{p} = \frac{16-4(4p)}{4p^2} = \frac{16-16p}{4p^2} = \frac{16(1-p)}{4p^2}$$

$$= \frac{4(1-p)}{p^2} \text{ or } \frac{4-4p}{p^2}$$