



## Rationals – Adding, Subtracting, Multiplying and Dividing

- Rule 1:** When adding two positive numbers, find the sum of their absolute values, the answer is positive.
- Rule 2:** When adding two negative numbers, find the sum of their absolute values, the answer is negative.
- Rule 3:** When adding one positive and negative number, find the difference between their absolute values and use the sign of the integer with the greatest absolute value.
- Rule 4:** When subtracting numbers with different signs, change the sign of the subtrahend (second number) and add using Rule 1, 2, or 3.
- Rule 5:** When multiplying numbers with the same sign, the answer is positive.
- Rule 6:** When multiplying numbers with different signs, the answer is negative.

**Example:**

$$\begin{aligned} \text{Simplify } \frac{1}{8} + \frac{-3}{8} + \frac{3}{8} \\ = \frac{1}{8} + 0 = \frac{1}{8} \end{aligned}$$

$$\begin{aligned} \text{Simplify } \frac{3}{4} - \left(\frac{-3}{4}\right) + \frac{1}{4} \\ = \frac{3}{4} + \frac{3}{4} + \frac{1}{4} = \frac{7}{4} \end{aligned}$$

$$\begin{aligned} \text{Simplify } 0.2(-7-5) \\ = 0.2(-7+ -5) = 0.2(-12) = -2.4 \end{aligned}$$

**Simplify the following.**

1.  $2(+5) + 2(+9)$

2.  $-2[(-3) + (-12)]$

3.  $(+4) + \left(\frac{-8}{4}\right)$

4.  $\left(\frac{-10}{-2}\right) - (+2)$

5.  $(+7) - (+2) + (+1)$

6.  $(-11) - (-3) + (4)$

7.  $\frac{5}{6} + \left(\frac{2}{3} - \frac{1}{3}\right)$

8.  $\frac{1}{3}(-13+4)$

9.  $0.5(-10)(-6)$

10.  $-0.2 - 0.9 - 1.1$

11.  $-7 + 24 + 1 - 3$

12.  $-8 \div \left(2 + \frac{1}{2}\right)$

13.  $\frac{35}{-7} + \frac{-14}{7}$

14.  $8(-3) - 10$

15.  $-2 + 3(0.4) - 5(0.3)$