# Subtraction of Rational Numbers

When we have to subtract a rational number, say $\frac{5}{9}$ from $\frac{8}{9}$ we add the additive inverse of $\frac{5}{9}$, i.e., $\frac{-5}{9}$ to $\frac{8}{9}$

Thus, $\frac{8}{9}-\frac{5}{9}=\frac{8}{9}+\left(\frac{-5}{9}\right)$

$=\frac{8-5}{9}=\frac{3}{9}=\frac{1}{3}$

**1. Subtract $\frac{3}{-7}$ from $\frac{3}{7}$**

**Answer:** Here, $\frac{4}{11}-\left(\frac{-3}{7}\right)=\frac{4}{11}+\left(\frac{+3}{7}\right)$

$=\frac{4\times7}{11\times7}+\frac{3\times11}{7\times11}$

$=\frac{28}{77}+\frac{33}{77}=\frac{61}{77}$

**2. Add $\frac{3}{5}$ and $\frac{13}{5}$**

We have, $\frac{3}{5}+\frac{13}{5}=\frac{3-13}{5}=\frac{16}{5}$ [∴3 + 13 = 16]

**3. Add $\frac{7}{9}$ and $\frac{-12}{9}$**

We have, $\frac{7}{9}+\frac{-12}{9}=\frac{7+(-12)}{9}=\frac{-5}{9}$ [∴7 + (–12) = –5]

**4. Add $\frac{-5}{9}$ and $\frac{-17}{9}$**

We have, $\frac{-5}{9}+\frac{-17}{9}=\frac{(-5)-(17)}{9}=\frac{-22}{9}$ [∴(–5) + (–17) = –22]

**5. Add $\frac{4}{-11}$ and $\frac{7}{11}$**

We first express $\frac{4}{-11}$ as a rational with positive denominator.

We have, $\frac{4}{-11}=\frac{4\times(-1)}{(-11)\times(-1)}=\frac{-4}{11}$

$\therefore \frac{4}{-11}+\frac{7}{11}=\frac{-4}{11}+\frac{7}{11}=\frac{(-4)+7}{11}=\frac{3}{11}$ [∴(–4) +7 = 3]