

VIII, NCERT Exemplar Solutions, Page 17
 Solutions by Dev Anoop (Bathinda)

$$110 @ x = -\frac{1}{2}, y = \frac{3}{4}, z = \frac{1}{4}$$

$$\begin{array}{l}
 \text{LHS} = x \times (y+z) \\
 = -\frac{1}{2} \times \left(\frac{3}{4} + \frac{1}{4} \right) \\
 = -\frac{1}{2} \left(\frac{4}{4} \right) \\
 = -\frac{1}{2}
 \end{array}
 \quad \mid \quad
 \begin{array}{l}
 \text{RHS} = xy + xz \\
 = -\frac{1}{2} \times \frac{3}{4} + -\frac{1}{2} \times \frac{1}{4} \\
 = -\frac{3}{8} + -\frac{1}{8} \\
 = -\frac{4}{8} \\
 \therefore x \times (y+z) = xy + xz
 \end{array}$$

$$110 (b) x = -\frac{1}{2}, y = \frac{2}{3}, z = \frac{3}{4}$$

$$\begin{array}{l}
 \text{LHS} = x \times (y+z) \\
 = -\frac{1}{2} \left(\frac{2}{3} + \frac{3}{4} \right) \\
 = -\frac{1}{2} \times \frac{8+9}{12} \\
 = -\frac{1}{2} \times \frac{17}{12} \\
 = -\frac{17}{24}
 \end{array}
 \quad \mid \quad
 \begin{array}{l}
 xy + xz \\
 = -\cancel{\frac{1}{2}} \times \cancel{\frac{2}{3}} + -\frac{1}{2} \times \frac{3}{4} \\
 = -\frac{1}{3} + -\frac{3}{8} \\
 = -\frac{8+9}{24} \\
 = -\frac{17}{24}
 \end{array}$$

$$\therefore x \times (y+z) = xy + xz$$

$$110 @ x = -\frac{2}{3}, y = \frac{2}{15}, z = -\frac{3}{10}$$

$$\begin{array}{l}
 x \times (y+z) \\
 = -\frac{2}{3} \left(\frac{2}{15} + -\frac{3}{10} \right) \\
 = -\frac{2}{3} \left(\frac{4+(-9)}{30} \right) \\
 = -\frac{2}{3} \times -\frac{5}{30}
 \end{array}
 \quad \mid \quad
 \begin{array}{l}
 xy + xz \\
 = -\frac{2}{3} \times \frac{2}{15} + -\frac{2}{3} \times -\frac{3}{10} \\
 = -\frac{4}{45} + \frac{1}{5} \\
 = -\frac{4+9}{45} \\
 = -\frac{1}{5}
 \end{array}
 \quad \mid \quad
 \begin{array}{l}
 = \frac{5}{45} \\
 = \frac{1}{9}
 \end{array}$$