Q) Find the ratio in which the YZ-plane divides the line segment formed by joining the points $(-2, 4, 7)$ and $(3, -5, 8)$.

Ans) Let the YZ plane divide the line segment joining points $(-2, 4, 7)$ and $(3, -5, 8)$ in the ratio $k : 1$.

Hence, by section formula, the coordinates of point of intersection are given by :

$$\left(\frac{k(3) - 2}{k + 1}, \frac{k(-5) + 4}{k + 1}, \frac{k(8) + 7}{k + 1}\right)$$

On the YZ plane, the x-coordinate of any point is zero.

$$\frac{3k - 2}{k + 1} = 0$$

$$3k - 2 = 0$$

$$k = \frac{2}{3}$$

Thus, the YZ plane divides the line segment formed by joining the given points in the ratio $2 : 3$.