Equation of the line passing through the points, $A(x_1, y_1, z_1)$ and $B(x_2, y_2, z_2)$ say is given by

$$\frac{x - x_1}{x_2 - x_1} = \frac{y - y_1}{y_2 - y_1} = \frac{z - z_1}{z_2 - z_1} \tag{1}$$

Given $A(x_1, y_1, z_1)$ = A(4, 7, 8) and $B(x_2, y_2, z_2)$ = B(2, 3, 4)

$$\frac{x - 4}{-2} = \frac{y - 7}{-4} = \frac{z - 8}{-4}$$
$$Hence, v_1 = (-2, -4, -4)$$

Given $A(x_1, y_1, z_1)$ = A(-1, -2, 1) and $B(x_2, y_2, z_2)$ = B(1, 2, 5)

$$\frac{x + 1}{2} = \frac{y + 4}{4} = \frac{z - 1}{4}$$
$$Hence, v_2 = (2, 4, 4)$$

Here, $v_2 = -v_1$
Hence, we conclude that the lines passing through the points (4 7 8), (2 3 4) is parallel to the line passing through the points (-1 -2 1), (1 2 5).