$$2K_1 + K_2 + 7K_3 = 0$$
$$-K_1 + 2K_2 + (-K_3) = 0$$
$$5K_2 + 5K_3 = 0$$
$$3K_1 - K_2 + 8K_3 = 0$$

$\boxed{K_1 = 3}$, $\boxed{K_2 = 1}$, $\boxed{K_3 = -1}$

The Set of vector $S = \{v_1, v_2, v_3\}$ is linearly dependent Since

$$3v_1 + v_2 - v_3 = 0$$

Example 02 Consider the vector $i = \{1, 0, 0\}$, $j = \{0, 1, 0\}$ and $K = \{0, 0, 1\}$ in R^3

Solution

$$K_1 i + K_2 j + K_3 K = 0$$
$$K_1(1, 0, 0) + K_2(0, 1, 0) + K_3(0, 0, 1) = 0$$
$$K_1 = 0$$
$$K_2 = 0$$
$$K_3 = 0$$

So, The set $S = \{i, j, K\}$ is lineaely independent set in R^3.