

Answer on Question #59688 – Math – Linear Algebra

Question

$r_4 = r_1 + r_2 = r_3$. which of the vectors are linearly dependent?

- a) r_1
- b) r_3
- c) r_4
- d) r_2

Solution

$$r_1 + r_2 = r_3$$

$$r_1 + r_2 = r_4$$

By definition, vectors X_1, X_2, X_3 are linearly dependent if there exist constants c_1, c_2, c_3 not all zero, such that

$$c_1 X_1 + c_2 X_2 + c_3 X_3 = 0$$

Vector r_4 is linearly dependent. Vector r_3 is linearly dependent too. Thus, the correct answers are b) and c).

Answer: b) r_3 and c) r_4 .