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ASSIGNMENT TITLE: MAT 102 ASSIGNMENT.

COURSE CODE: MAT 102

COURSE TITLE: GENERAL MATHEMATICS II

MATRIC NUMBER: 19/EN902/018.

QUESTION 2.

Perpendicular vectors: ~~A perpendicular vector is~~

perpendicular vectors are vectors that form a right angle and their dot product is zero.

Coplanar vectors:

Coplanar vectors are vectors that lie on the same plane or are perpendicular to the same plane.

Diagram. Fig 1.

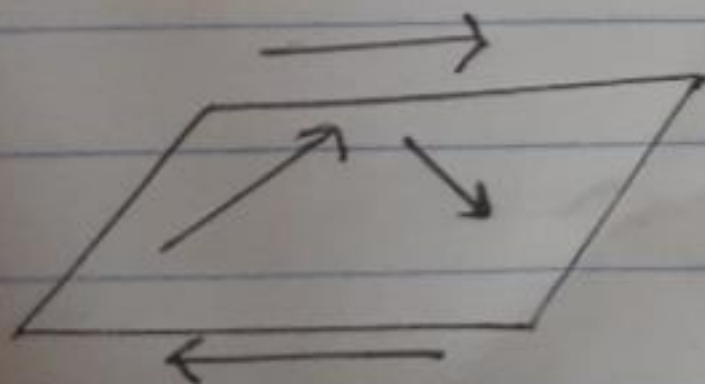


Fig 1. It is always possible to find a plane parallel to the two random vectors, in that any two vectors are always, co-planar.

QUESTION 1

1. $-3A + 7B - 8C$

$$-3(2i - j) + 7(5i + j - 11k) - 8(4i + 4j - 5k)$$
$$-6i - 3j + 21i + 7j - 77k - 32i + 32j - 40k$$

Re-arrange like terms

$$-6i + 21i - 32i - 3j + 7j + 32j - 77k - 40k$$

$$= 15i - 32i + 4j + 32j - 77k - 40k$$

$$= \underline{\underline{-17i + 36j - 117k}}$$