

Q1. Given that $\underline{a} = \begin{pmatrix} 3 \\ 2 \\ -1 \end{pmatrix}$ and $\underline{b} = \begin{pmatrix} 4 \\ -3 \\ -6 \end{pmatrix}$

- (i) Find the value of $2\underline{a} - \underline{b}$
Calculate the magnitude of $|2\underline{a} - \underline{b}|$

Q2. State the coordinates of the point C such that $\overrightarrow{AC} = 2\overrightarrow{AB}$ where A = (2, 3) and B = (-1, 5)

Q3. A is (0, -3, 5), B is (7, -6, 9) and C is (21, -12, 17). Show that A, B and C are collinear stating the ratio AB : BC.

- Q4. (a) (i) Show that the points A(-7, -8, 1), T(3, 2, 5) and B(18, 17, 11) are collinear.
(ii) Find the ratio in which T divides AB.