

K Education Centre

GCSE Maths - Higher

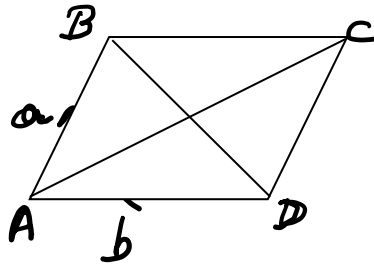
Vectors

Assignment Questions

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Year 2023

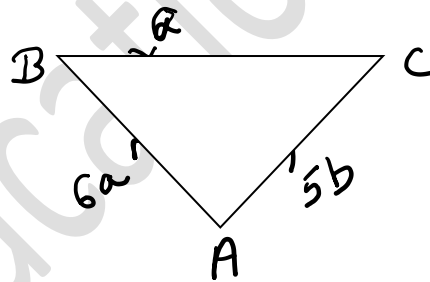
Vectors

Q1 : ABCD is a parallelogram , AB is parallel to CD. AD is parallel to BC. Write down following vectors in terms of a and b .



- a) \vec{DB} b) \vec{CD} c) \vec{BD} d) \vec{CA}

Q2: ABC is a triangle. $\vec{AB} = 6a$ and $\vec{AC} = 5b$



a) Find \vec{BC}

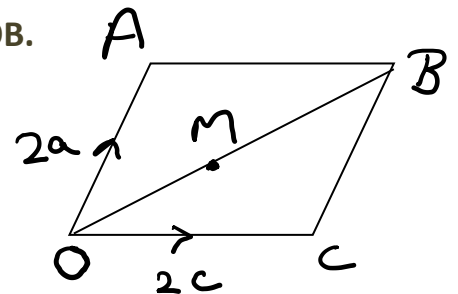
b) Q is the point on BC such that BQ : QC = 1:3

Prove that $\vec{AQ} = \frac{1}{2} (9a + \frac{5}{2} b)$

Q3: OABC is a parallelogram . M is the midpoint of diagonal OB.

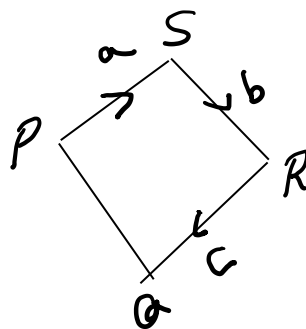
$\vec{OA} = 2a$ and $\vec{OC} = 2c$

- a) Express \vec{OM} in terms of a and c.
 b) Use vectors to prove that M is also midpoint of AC.



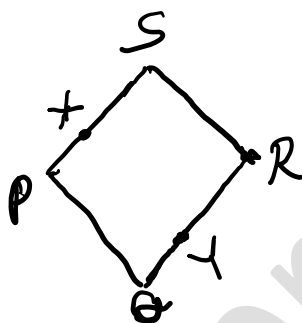
Q4: Here is quadrilateral PQRS.

$\vec{PS} = a$
 $\vec{SR} = b$
 $\vec{RQ} = c$



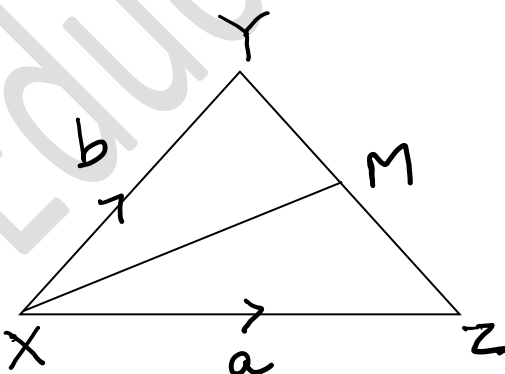
X is a point on PS where $PX : XS = 1 : 2$

Y is a point on RQ where $RY : YQ = 2 : 1$



Is XY Parallel to PQ ? Show your working.

Q5:



In the diagram $\vec{XZ} = a$ and $\vec{XY} = b$

M is midpoint of YZ.

- a) Work out \vec{ZY} b) Work out \vec{ZM} c) Work out \vec{OM}