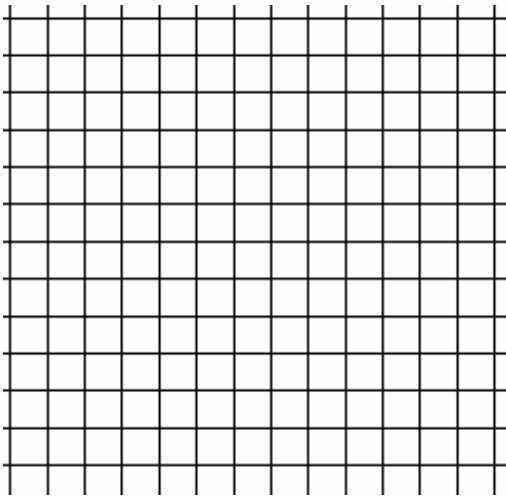


Name _____

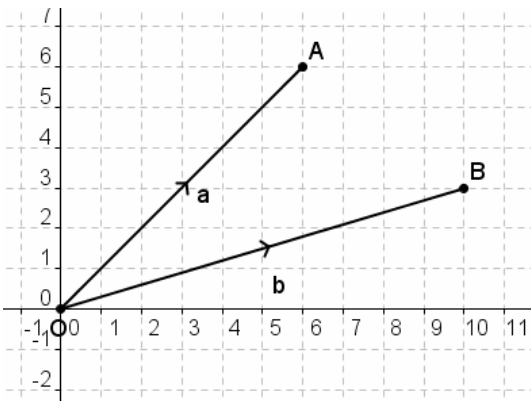


Draw and label the following vectors

$$a = \begin{pmatrix} 3 \\ 1 \end{pmatrix} \quad b = \begin{pmatrix} 1 \\ 4 \end{pmatrix}$$

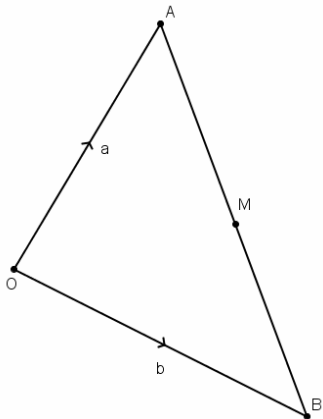
$$c = \begin{pmatrix} -2 \\ -1 \end{pmatrix} \quad d = \begin{pmatrix} 2 \\ -2 \end{pmatrix}$$

$$e = \begin{pmatrix} 3 \\ 0 \end{pmatrix} \quad f = \begin{pmatrix} -1 \\ 2 \end{pmatrix}$$



Shown above is vector $\vec{OA} = \begin{pmatrix} 7 \\ 5 \end{pmatrix}$ Find (i) \vec{OB} (ii) \vec{AO} (iii) \vec{AB} (iv) \vec{BA} (v) \vec{BO}

Give you answer in vector notation (simply use a basic translation)



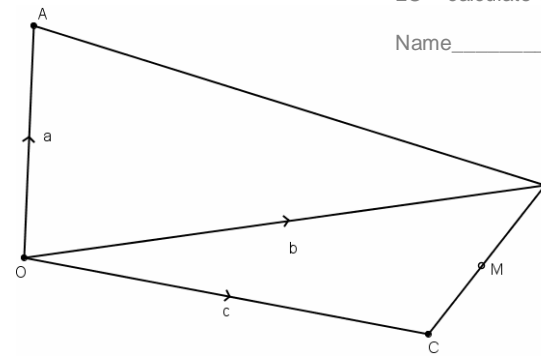
Study the diagram to the left where the points A,B,C and M are shown

$$\vec{OA} = a$$

$$\vec{OB} = b$$

M is the midpoint of Line AB. Find in terms of a and b:

- (i) \vec{AB} (ii) \vec{AM} (iii) \vec{MB} (iv) \vec{OM} (v) \vec{MA} (vi) \vec{BM}



Consider the vectors shown to the left.

$$\vec{OA} = a$$

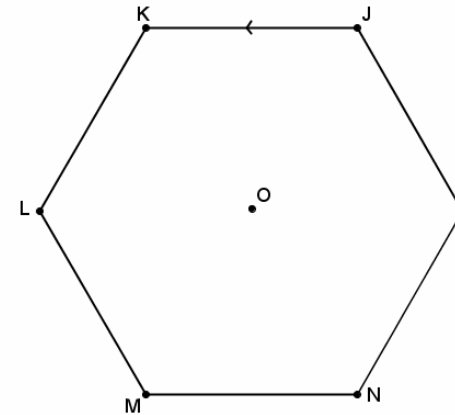
$$\vec{OB} = b$$

$$\vec{OC} = c$$

Find in terms of a,b, and c:

- (i) \vec{AO} (ii) \vec{AC} (iii) \vec{OC} (iv) \vec{BC}

- (v) \vec{OM} (vi) \vec{MC}



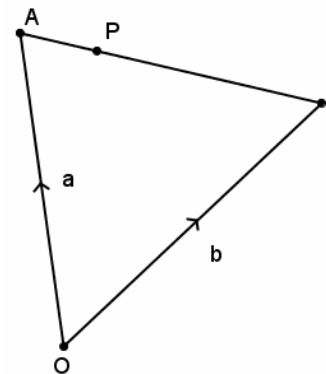
The regular hexagon to the left has points I-N

$$\vec{JK} = k$$

$$\vec{OJ} = j$$

Find in terms of i and j:

- (i) \vec{LO} (ii) \vec{IK} (iii) \vec{KM} (iv) \vec{JN} (v) \vec{ON}



P lies on the line AB such that AP is $\frac{1}{2}$ PB

Find the following vectors in terms of a and c

- (i) \vec{AO} (ii) \vec{AB} (iii) \vec{AP} (iv) \vec{PB} (v) \vec{OP}

A* extension Given that line AB is 6 units, BO is 4 units and AO is 5 units. Work out the area of the triangle

Extension

The Smith family begins a vacation trip by driving 700 km west. Then the family drives 600 km south, 300 km east, and 400 km north. Where will they end up in relation to their starting point?