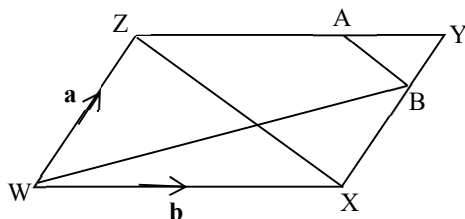


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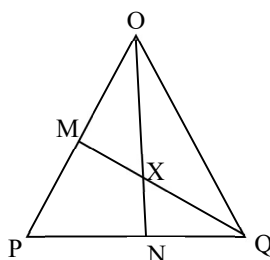
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Vectors Worksheet 2

1. $WXYZ$ is a parallelogram, $\overrightarrow{BX} = 2\overrightarrow{YB}$, $\overrightarrow{AY} = \frac{1}{3}\overrightarrow{ZY}$, $\overrightarrow{WZ} = \mathbf{a}$ and $\overrightarrow{WX} = \mathbf{b}$.
- (a) Express in terms of \mathbf{a} and/or \mathbf{b} ,
- (i) \overrightarrow{ZA} (ii) \overrightarrow{XB} (iii) \overrightarrow{WB}
 (iv) \overrightarrow{XZ} (v) \overrightarrow{BA}



2. In the diagram, M is the mid-point of OP , $QX = 3 XM$. Given that the position vectors of P and Q relative to O are \mathbf{p} and \mathbf{q} , find the position vector of X relative to O .



3. In Fig.4.1, \overrightarrow{OU} and \overrightarrow{OV} represent the vectors $15\mathbf{u}$ and $15\mathbf{v}$ respectively. $\overrightarrow{OA} = \frac{1}{3}\overrightarrow{OU}$ and $\overrightarrow{OB} = \frac{1}{3}\overrightarrow{OV}$. Find the vectors \overrightarrow{AB} and \overrightarrow{UV} in terms of \mathbf{u} and \mathbf{v} . Given that $\overrightarrow{AX} = \frac{1}{4}\overrightarrow{AV}$, express the vectors \overrightarrow{VA} , \overrightarrow{UX} and \overrightarrow{XB} in terms of \mathbf{u} and \mathbf{v} .

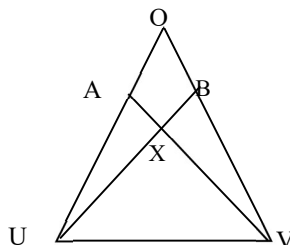


Fig.4.1