**11E Geometric Problems**

1. In the diagram the points A and B have position vectors **a** and **b** respectively. The point P divides line AB in the ratio 1:2. Find the position vector of P



1. In triangle $ABC$, $\vec{AB}=3i-2j$ and $\vec{AC}=i-5j$. Find the size of $∠BAC$ in degrees.
2. OABC is a parallelogram. P is the point where OB and AC intersect.

The vectors **a** and **c** represent OA and OC respectively.

Prove that the diagonals bisect each other.