**9C Scalar Products & Angles Between Lines**

1. Given that $a=\left(\begin{matrix}8\\-5\\-4\end{matrix}\right)$ and $b=\left(\begin{matrix}5\\4\\-1\end{matrix}\right)$.
2. Find $a.b$
3. Find the angle between $a$ and $b$, giving your answer in degrees to 1 decimal place
4. Given that the vectors $a=2i-6j+k$ and $b=5i+2j+λk$are perpendicular, find the value of $λ$**.**
5. Given that $a=-2i+5j-4k$ and $b=4i-8j+5k$, find a vector which is perpendicular to both $a$ and $b$.
6. The points $A$, $B$ and $C$ have coordinates $(2,-1,1)$, $(5,1,7) $and $(6,-3,1) $respectively.
7. Find $\vec{AB}.\vec{AC}$
8. Hence, or otherwise, find the area of triangle $ABC$