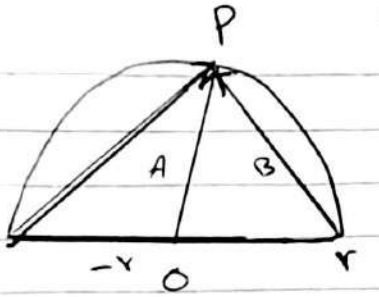
1.2.11



$\vec{A} = P - (-r) = P + r$

$\vec{B} = P - r$

$A \cdot B = (P + r)(P - r)$

$= \vec{P}\vec{P} - Pr + Pr - \vec{r}\vec{r}$

$= \vec{P}\vec{P} - \vec{r}\vec{r}$ since $\vec{P}$ & $\vec{r}$ lies on same circle connected to same center

$= \vec{P}\vec{P} - \vec{P}\vec{P}$ so $P = r$

$= 0$ because the result is zero the Right