A portain plane has an air anaad (relative to air) of 110 m/s
A certain plane has an air speed (relative to air) or rio m/s.
a. The plane is flying directly South when it encounters a crosswind of 45 m/s blowing to the West. What is the plane's total resultant velocity? Include a vector diagram.
 b. If the plane wants to return to it's original heading of due South, what heading
should it make in order to compensate for the crosswind? Include a vector
diagram.

G.)  $V_{T}^{2} = V_{1}^{2} * V_{2}^{2}$ VT . ' 🔶 V,=110m/s  $V_T = \sqrt{10^2 + 45^2}$ = 118.8 ķ  $V_2 = 45 m/s$ = 120 m/s  $\tan \theta = \frac{45}{10}$   $\theta = \tan^{-1}\left(\frac{45}{10}\right)$ VT = 120nls 22° (Wofs) 22 5 6.)  $V_1 = |10m|s$ 10  $\sin \theta = 45$ )10  $\theta = \sin^{-1}\left(\frac{45}{10}\right)$ = 24° (E of S)  $V_2 = 45 m ls$