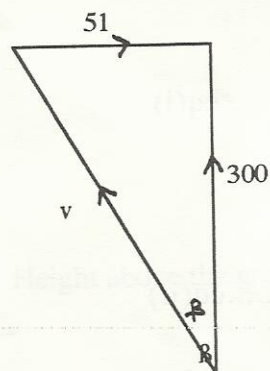


4(a) (i) Velocity of A relative to B = Vel. of A - Vel. of B
 $= 4 \vec{i} - 3 \vec{i}$ 5
 $= 1 \vec{i}$ or 1 m/s East 5 10

(ii) Velocity of A relative to B = Vel. of A - Vel. of B
 $= 4 \vec{i} - (-3) \vec{i}$ 5
 $= 7 \vec{i}$ or 7 m/s East 5 10

(iii) Velocity of A relative to B = Vel. of A - Vel. of B
 $= 4 \vec{i} - 3 \vec{j}$ 5
 $= 5 \text{ m/s } \beta^\circ \text{ S of E}$ where $\tan \beta = 0.75$ 5 10

(b) In still air the plane travels 225 km in 45 min = 300 km/hr 5



$$v^2 = 51^2 + 300^2$$
 5

$$v = 304.3 \text{ km/hr}$$
 5

$$\tan \beta = \frac{51}{300} \text{ or } 0.17$$
 5 20

$$\beta = 9.648^\circ \text{ or } 9^\circ 39'$$