1 **(a)** State what is meant by a *scalar* quantity and by a *vector* quantity.

scalar: .....

.....

vector: .....

.....

[2]

(b) Complete Fig. 1.1 to indicate whether each of the quantities is a vector or a scalar.

quantity	vector or scalar
power	
temperature	
momentum	

Fig. 1.1

[2]

(c) An aircraft is travelling in wind. Fig. 1.2 shows the velocities for the aircraft in still air and for the wind.

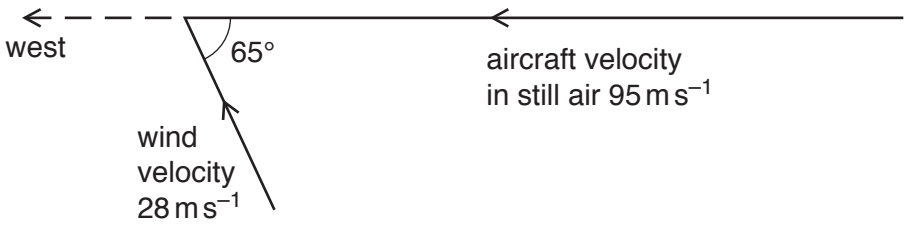

Fig. 1.2

The velocity of the aircraft in still air is 95 m s^{-1} to the west.
The velocity of the wind is 28 m s^{-1} from 65° south of east.

(i) On Fig. 1.2, draw an arrow, labelled R, in the direction of the resultant velocity of the aircraft. [1]

(ii) Determine the magnitude of the resultant velocity of the aircraft.

magnitude of velocity = ... $m\,s^{-1}$ [2]

[Total: 7]