

## Assignment 5

(5 questions  
x 2 = 10 marks)

1. Determine the area of the quadrilateral PQRS where  $P(2, -1, -1)$ ,  $Q(-4, -2, 3)$ ,  $R(2, 3, 2)$  &  $S(8, 4, -2)$ .
2. A pilot wishes to fly from his home field 625 km.  $S 20^\circ E$ . The cruising speed of the aircraft is 535 km/hr. If there is a wind of 72 km/hr blowing from  $N 80^\circ W$ , what heading should the pilot take in order to reach his destination and how long will the flight take?
3. Determine whether the line and the plane are perpendicular.  
 $x = 2 + t$ ,  $y = 1 - t$ ,  $z = 5 + 3t$  ;  $6x + 6y - 7z = 0$
4. Find the parametric equation for the line of intersection of the planes:  
 $2x + 3y - 5z = 0$  and  $y = 0$
5. Determine whether the planes are parallel.  
 $(3, 0, -1) \cdot (x+1, y-z, z-3) = 0$   
 $(4, 0, 3) \cdot (x+1, y-z, z-3) = 0$