

**Quiz 2 (10 pts)**  
Math 230, Fall 2008  
Due Monday, September 15

**NAME(1 pt):**  
**STUDENT ID NUMBER:**

**SHOW YOUR WORK**

1.(4pts) a) Find the area of a triangle with vertices  $A(1, 2)$ ,  $B(-1, 5)$ ,  $C(2, 4)$ .

b) Find which of the following two sets of four points is a parallelogram  $ABCD$ .  
 $A(0, 1, 2)$ ,  $B(2, 3, 4)$ ,  $C(3, 3, 5)$ ,  $D(1, 1, 3)$  or  $A(0, 1, 2)$ ,  $B(2, 3, 4)$ ,  $C(3, 3, 5)$ ,  $D(1, 1, 2)$

c) Find the area of the parallelogram  $A(1, 0, 1)$ ,  $B(2, 1, 2)$ ,  $C(4, 2, 3)$ ,  $D(3, 1, 2)$

d) Find the volume of the parallelepiped spanned by vectors

$$\langle 1, 1, 1 \rangle, \langle 1, 0, 2 \rangle, \langle 5, 5, -1 \rangle$$

2.(5pts) a) Find the distance between a plane  $x + 2y + 2z = 12$  and the point  $(6, 4, -4)$ .

b) Find cosine of the angle between planes  $x + y + z = 1$  and  $x - 2y - 3z = 10$ .

c) Find at what point the line  $\frac{x-1}{1} = \frac{y+2}{2} = \frac{z+1}{-1}$  intersects the plane  $x + 2y - z = 4$ .

d) Find an equation of a plane passing through the line  $x = 1 - t, y = 2 + 2t, z = t$  and perpendicular to the plane  $2x + y + z = 0$ .

e) Find an equation in SYMMETRIC form of the line parallel to the line  $x = 2 - t, y = t - 3, z = 0$  and passing through the origin.