MATH 2220 Multivariable Calculus   Fall 2012   Prof.R.Rand

Prelim No.1

In class, Monday October 1, 2012

RULES: Closed book exam. No calculators, computers, i-phones or other electro-mechanical devices. Show all work, explain what you are doing.

1. Find a vector normal to the surface
$$x^2 - xy + yz - 3 = 0$$
at the point (1,2,2).

2. Find the area of the triangle formed by the points:
$$A\ (1,1,1), \quad B\ (1,2,3), \quad C\ (2,3,1)$$

3. Find the equation of the plane which:

(i) contains the line
$$\mathbf{r} = (x, y, z) = (1, 2, 3) + t(4, 5, 6)$$

and (ii) is perpendicular to the plane
$$3x + 2y + z = 1$$