Tutorial ...

Name:_____

ID:_____

Mathematics 1E2 2006–07

HW 5 Due 14/11/06

(1)(10 marks) Give an equation for the line through the points $(2, 3)$ and $(1, 4)$, by means of a 'positive normal' to $\vec{PQ}$.

(2)(10 marks) Find a point on the line $3x + 4y = 5$ and hence interpret the equation in the form $\{X : \vec{ON} \cdot \vec{PX} = 0\}$.

(3)(10 marks) Give an equation for the plane through the points $(1, -1, 1)$, $(2, 2, -1)$, and $(-5, -6, 2)$, using a cross product.

(4) (20 marks). Apply the Gram-Schmidt orthogonalisation procedure to the points $(1, 2, 3)$, $(4, 5, 6)$, and $(0, 0, 1)$. (The third point is almost irrelevant).