Name: _____

**Problem 1** (10 points)

   a)  Compute the cross product of the vectors $\langle 1,3,4 \rangle$ and $\langle 2,3,4 \rangle$.

   b)  What is the area of the triangle with vertices $P(0,0,0)$, $P(1,3,4)$, and $P(2,3,4)$?

**Problem 2** (10 points)

   a)  Find symmetric equations for the line through the point $P(1,0,-1)$ parallel to the vector $\langle 3,2,1 \rangle$.

   b)  At what point does this line intersect the $xy$-plane?