## Name: <br> MATH 124 - Fall 2004 <br> Extra credit (15 points)

Consider the surface $S$ given by the paraboloid $z=9-x^{2}-y^{2}$ for $x^{2}+y^{2} \leq 9$.

1. Write parametric representation of the surface of the form $X(x, y)=(x, y, f(x, y))$ and find a normal pointing up.
2. Write an equation for the tangent plane to the surface at the point on the surface $(1,1,7)$.
3. Compute the flux of the vector field $F(x, y, z)=(3,0,2)$ across the surface in the direction of the normal pointing up.
