1. Find an equation for the tangent plane to the parametric surface
$x=v^2$, $y=u+v$, $z=u^2$ at the point $(1,2,1)$

$r=v^2i+(u+v)j+u^2k$
$r_u=0i+j+2uk = 0i+j+k$
$r_v=2vi+j+0k = i+j+0k$
Take the cross product = $\langle -1,1,-1 \rangle$
Plug the points and the cross product values into tangent plane equation.

2. Evaluate the surface integral
Where S is the triangular region with vertices
$(2,0,0),(0,2,0),(0,0,2)$

Find the two vectors that can be found using the three vertices
Take the cross product of the vectors to get $(4,4,4)$
Solve to get $y=2-x$
Use this to find the bounds for the surface integral.
$2-x-y(Sqrt(1+1+!))dA$
Solve all the way through