1. Let $= x^2 y\imath + y^2 z\jmath + z^2 x$. Compute ().

2. Let C be the curve defined by $r(t) = t\imath + \cos(t)\jmath$, $0 \le t \le \pi/2$. Compute the line integral $\displaystyle\int_C 2y\sqrt{1-y^2}\,ds$.