11/10/20 Quiz for Lecture 22 q22.

1) $\iint_S F\,dS$

$F(x,y,z) = \langle xy,\ yz,\ xz \rangle$.

S is on $z = 1 - x^2 - y^2$ $x: [0,1]$ $y: [0,1]$.

$P = xy$ $Q = yz$ $R = xz$.

$$\int\int (-xy(-2x) - yz(-2y) + xz)\,dA$$

$$\int\int (2x^2y + 2y^2z + xz)\,dA.$$

$$\int_0^1\int_0^1 (2x^2y + 2y^2(1-x^2-y^2) + x(1-x^2-y^2))\,dA$$

↳ Maple

↳ 0.83