

Elyas Sanzar

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$$z = q = 1 - x^2 - y^2$$

$$\iint_D (-p \frac{dq}{dx} - q \frac{dq}{dy} + p) dA$$

$$\iint_D (-xy \cdot -2x) - (yz \cdot -2y) + z dx = 2x^2 + 2xz = 0$$

$$\iint_D 2x^3 y^2 + (2y^2 + x)(1 - x^2 - y^2) dA \quad D = \{(x, y) \mid 0 \leq x < 1, 0 \leq y < 1\}$$

$$\boxed{\text{mple} = 83/180}$$