

Problems: Calculating Flux

1. Find the flux of $\mathbf{F} = \langle x, y, z \rangle$ through the surface $x^2 + y^2 + z^2 = 1$, where $z \geq 0$.
2. Find the flux of $\mathbf{F} = \langle 0, x, 0 \rangle$ through the portion of the plane $x + z = 1$ for which $x > 0$, $0 < y < 1$ and $z > 0$.

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