

1 Flux through a Plane

Find the upward pointing flux of the vector field $\vec{H} = 2z\hat{x} + \frac{1}{x^2+1}\hat{y} + (3+2z)\hat{z}$ through the rectangle R with one edge along the y axis and the other in the xz -plane along the line $z = x$, with $0 \leq y \leq 2$ and $0 \leq x \leq 3$.