

Find the flux of  $\mathbf{F} = \langle xy, yz, xz \rangle$  across the surface  $S$  of the cube  $\{|x| \leq 1, |y| \leq 1, |z| \leq 1\}$

(a) using the Divergence Theorem.

(b) using the given definition of flux:  $\iint_S \mathbf{F} \cdot d\mathbf{S}$