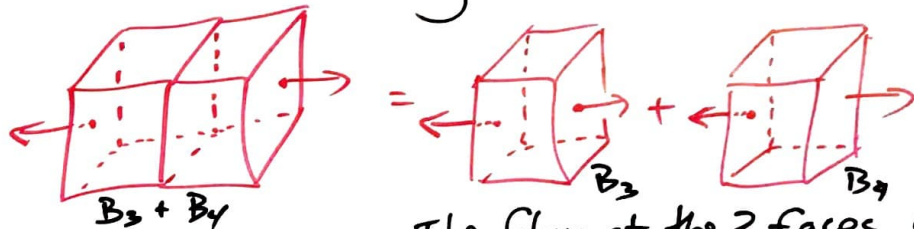


To show the Divergence Theorem, write the region W as the sum of n tiny boxes (à la Minecraft)

$$W = \sum_{i=1}^n B_i$$



$$\iiint_W \vec{\nabla} \cdot \vec{F} dV \approx \sum_{i=1}^n \iiint_{B_i} \vec{\nabla} \cdot \vec{F} dV \approx \sum_{i=1}^n (\vec{\nabla} \cdot \vec{F})_i \Delta x \Delta y \Delta z$$

$$\approx \sum_{i=1}^n \iint_{\partial B_i} \vec{F} \cdot d\vec{S}$$

$$\approx \iint_{\partial W} \vec{F} \cdot d\vec{S}$$

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