

1. Let  $\langle P, Q, R \rangle = \text{curl} F$ .

Computing  $P/x \ Q/y \ R/z$  is same as taking the  $\text{div} F$

$$\text{div}(\text{curl} F) = 0$$

$$\text{Since } \langle P, Q, R \rangle = \text{curl} F, \text{ div} \langle P, Q, R \rangle = 0$$

2. Surface integral = volume integral of  $\text{div} F$

$$\text{div} F = 2+2+2 = 6$$

$\int \int \int 6 \, dz dy dx$  from  $z=0..5 \ y=0..4 \ x=0..1$

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