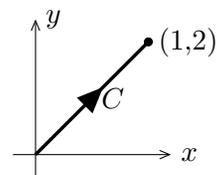


Problems: Flux Across Curves

Compute the flux of $\mathbf{F} = x^2 \mathbf{i} + y \mathbf{j}$ across the line segment from $(0, 0)$ to $(1, 2)$.

Answer: Parametrize the curve as $x = x$, $y = 2x$, $0 \leq x \leq 1$.

$$\text{Flux} = \int_C M dy - N dx = \int_0^1 x^2 2dx - 2x dx = \frac{2}{3} - 1 = -\frac{1}{3}.$$



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