

- Find $\int_C \underline{F} \cdot d\underline{r}$ for $\underline{F} = \langle x^2, xy^2, z \rangle$ and C the line from the origin to the point $(2, 3, 4)$.
- Let $f = \sin x \cos y$ and $\underline{F} = \nabla f$. Let C be a path connecting $(\pi/2, 0)$ to $(0, \pi/2)$. Use the ftcli to find $\int_C \underline{F} \cdot d\underline{r}$.
- Find the scalar curl for $\underline{F} = \langle x \sin y, \cos y \rangle$. Then identify whether \underline{F} is an irrotational vector field, or not.