

Homework Set 12

DUE: DEC 2, 2019 (AT THE BEGINNING OF CLASS)

To be handed in:*Please write your solution to Problems 1 and 2 on a single sheet of paper!*

1. Compute the line integral $\int_{\gamma} \vec{F} \, d\gamma$, where γ is the line segment from $(1, 1)$ to $(3, 4)$, and $\vec{F}(x, y) = (xy - 1, x^2 + 3y)$.
2. Compute the line integral $\int_{\gamma} \vec{F} \, d\gamma$, where $\gamma(t) = (t \cos t, t \sin t, t)$, with $t \in [0, \pi]$, and \vec{F} is the **curl** of the vector field $\vec{G}(x, y, z) = (-z, y + 1, x)$, that is, $\vec{F} = \nabla \times \vec{G}$.

NOT to be handed in (but recommended for you to practice with):

2. Textbook (5th edition) Section 15.2, Exercises 2, 3, 39, 40, 45, 46, 77