

18.022 Recitation Quiz
19 November 2014

1. Define $f : \mathbb{R}^3 \rightarrow \mathbb{R}$ by $f(x, y, z) = x^2y + 2y + \sqrt{z} + 3$.

(a) Find $\nabla \times (\nabla f)$.

(b) Calculate $\int_C \nabla f \cdot d\mathbf{s}$, where C is the right half of the ellipse $2x^2 + y^2 = 1$ in the x - y plane, oriented counterclockwise as shown below.

