

18.022 Recitation Quiz  
17 November 2014

1. Consider the two parametrizations of the line segment  $S$  from  $(0, 0)$  to  $(3, 3)$  given by

$$\begin{aligned} \mathbf{x}_1(t) &= (t, t) & 0 \leq t \leq 3 \\ \mathbf{x}_2(t) &= (2t, 2t) & 0 \leq t \leq 3/2. \end{aligned}$$

(a) Evaluate the line integral  $\int_S x^2 dx + y dy$  using the parametrization  $\mathbf{x}_1$ .

(b) Evaluate the line integral  $\int_S x^2 dx + y dy$  using the parametrization  $\mathbf{x}_2$ .