

Please PRINT your name _____

No calculators, cell phones, computers, notes, etc.

Circle your answer. Make your work correct, complete, and coherent.

The quiz is worth 5 points. The solutions will be posted on my website later today.

Quiz 7, April 18, 2019

Evaluate $\int_C (x+y)ds$, where C is the straight line segment $x = t$, $y = (1-t)$, $z = 0$ from $(0, 1, 0)$ to $(1, 0, 0)$.

ANSWER: Parameterize the curve with $\vec{r}(t) = t\vec{i} + (1-t)\vec{j}$ with $0 \leq t \leq 1$. Then

$$\int_C (x+y)ds = \int_0^1 (t + (1-t))|\vec{r}'(t)|dt = \int_0^1 |\vec{i} - \vec{j}|dt = \sqrt{2} \int_0^1 dt = \sqrt{2}t \Big|_0^1 = \boxed{\sqrt{2}}.$$