

Quiz 8

1. Which of the following represents the integral of $f(x, y) = x^2 + y^2$ over the unit circle? (1 pt.)

(a) $\int_0^1 \int_0^{2\pi} r^2 \, dr \, d\theta$

(b) $\int_0^{2\pi} \int_0^1 r^2 \, dr \, d\theta$

(c) $\int_0^1 \int_0^{2\pi} r^3 \, dr \, d\theta$

(d) $\int_0^{2\pi} \int_0^1 r^3 \, dr \, d\theta$

2. Use cylindrical coordinates to calculate the integral of $f(x, y, z) = y$ on the region given by $x^2 + y^2 \leq 1$, $x \geq 0$, $y \geq 0$, $0 \leq z \leq 2$ (9 pt.)