

Math 2215 - Calculus 1

Quiz #1 - 2017.01.10

Solutions

Compute the following integral: $\int z^2 \cos(z^3) dz$

We will use substitution here. Setting $u = z^3$, we have $du = 3z^2 dz$, or $\frac{1}{3} du = z^2 dz$.

$$\begin{aligned}\int z^2 \cos(z^3) dz &= \frac{1}{3} \int \cos(u) du \\ &= \frac{1}{3} \sin(u) + \mathcal{C} \\ &= \frac{1}{3} \sin(z^3) + \mathcal{C}\end{aligned}$$