

Math 2215 - Calculus 1

Quiz #16 - 2016.11.02

Solutions

Compute the following integral:

$$\int \sqrt[5]{3z+4} dz$$

We perform a substitution here, letting $u = 3z + 4$, which gives $du = 3dz$, or $dz = \frac{1}{3}du$. Thus

$$\begin{aligned}\int \sqrt[5]{3z+4} dz &= \frac{1}{3} \int u^{1/5} du \\ &= \frac{1}{3} \cdot \frac{5}{6} \cdot u^{6/5} + C \\ &= \frac{5}{18} \cdot (3z+4)^{6/5} + C\end{aligned}$$