

Supplementary Homework Exercises for Section 8.2: Trigonometric Integrals (part 2)

Exercises

Complete the following exercises.

S1. $\int \sec^2 x \tan x \, dx$

S2. $\int \tan^2 x \, dx$

S3. $\int_0^{\pi/3} \sec^6 x \tan^5 x \, dx$

S4. $\int \frac{\tan^3 x}{\cos^4 x} \, dx$

S5. A nugget moves on a straight line with velocity function $v(t) = \sin(\alpha t) \cos^2(\alpha t)$, where α is some constant and t is measured in seconds. Find the net distance traveled by the nugget over the interval $[0, \pi]$.