

Homework Set 8

(sect 6.2: Trig Integrals)

1. $\int \sin^5 x \cos^3 x \, dx$

2. $\int \cos^5 x \, dx$

3. $\int_0^{\pi/2} \sin^2 x \, dx$

4. $\int_0^{\pi/4} \tan^3 x \sec^4 x \, dx$

5. A particle moves on a straight line with velocity function $v(t) = \sin(\omega t) \cos^2(\omega t)$. Find the particle's position function $f(t)$ if $f(0) = 0$.