Math 141 Section 8.3 Study Guide

Michael Levet

Problem 1) Evaluate the following integrals.

(a) $\int \cos^2(x)\,dx$

(b) $\int \sin^2(x)\,dx$

(c) $\int \sin^3(x)\,dx$

(d) $\int \cos^3(x)\,dx$

(e) $\int \cos^4(x)\,dx$

(f) $\int \cos^5(x)\,dx$

(g) $\int \sin^5(x)\,dx$

(h) $\int \cos^2(x)\sin^2(x)\,dx$

(i) $\int \cos^6(x)\sin^2(x)\,dx$

(j) $\int_0^{\pi/4} \sqrt{1-\cos(4x)}\,dx$

(k) $\int \tan^6(x)\,dx$

(l) $\int \tan^6(x)\sec^6(x)\,dx$

Problem 2) Find an algebraic expression for each of the following. Your final answer should not have any trig functions in it.

1. $\csc(\cos^{-1}(x))$
2. $\sin(\tan^{-1}(x))$
3. $\tan(\sin^{-1}(x)$
4. $\cos(\sin^{-1}(x))$