Section 8.3

Power-Reducing Trig Identities: These are useful for evaluating certain trig integrals.

$$\sin^2 x = \frac{1 - \cos 2x}{2}, \qquad \cos^2 x = \frac{1 + \cos 2x}{2}$$

Guidelines: There are several guidelines for evaluating integrals involving combinations of powers of sines and cosines, and secants and tangents. The guidelines are on p. 536 (sines and cosines) and p. 539 (secants and tangents).

1) Find the following:
   a) $\int \sin^2 x \cos^5 x \, dx$.

   b) $\int \cos^3 x \sqrt{\sin^3 x} \, dx$

   c) $\int \cos^4 x \, dx$

   d) $\int_0^{\pi/2} \cos^7 x \, dx$

2) Find the following:

a) $\int \sec^3 x \tan^3 x \, dx$

b) $\int \frac{\sec^4 x}{\sqrt{\tan x}} dx$

c) $\int_{-\pi/8}^{0} \tan^4 2x \, dx$

d) $\int \sec^3 x \tan x \, dx$

Homework for 8.3: #7-9, 11, 20, 21, 23, 29, 31, 49