

## Brief answer to selected problems in Homework 15

### 1. Section 8.2

Problem 28: With the hint,  $= \int_0^{\frac{1}{2}} \frac{ds}{\sqrt{1-s}} = 2 - \sqrt{2}$ .

Problem 34: Sol 1:  $\int \sec x \tan^2 x dx = \int \tan x d \sec x = \tan x \sec x - \int \sec^3 x dx$   
 $= \tan x \sec x - \int \sec x \tan^2 x dx - \int \sec x dx$ .

Sol 2:  $\int \sec x \tan^2 x dx = \int \frac{\sin^2 x}{\cos^3 x} dx = \int \frac{s^2 ds}{(1-s^2)^2}$ . Then apply technique of partial fractions in Section 8.4.

### 2. Section 8.3

Problem 48: Using  $u^2 = x - 1$  and Trigonometric Substitutions.

Problem 54: Trigonometric Substitutions can get answer:  $ab\pi$