

Section 28.4: cont'd

January-16-17
1:06 PM

Test #1 on Friday, January 27

it will cover all sections we cover
in Chapter 28

formula sheet posted on web
- you will be provided with a clean
copy at the test

$$\textcircled{9} \quad \int \frac{\tan 2x}{\cos 2x} dx$$

$$= \int \frac{\sin 2x}{\cos^2 2x} dx$$

$$= \int -\frac{1}{2} \frac{du}{u^2}$$

$$= \int -\frac{1}{2} u^{-2} du$$

$$= +\frac{1}{2} u^{-1} + C$$

$$\begin{aligned} \text{let } u &= \cos 2x \\ du &= -2 \sin 2x dx \end{aligned}$$

$$= \frac{1}{2 \cos 2x} + C$$

$$= \frac{1}{2} \sec 2x + C$$

} either

method #2:

$$\int \frac{\tan 2x}{\cos 2x} dx = \int \tan 2x \sec 2x dx$$

$$= \frac{1}{2} \sec 2x + C$$

⑩ $\int \sin x \cos x dx$

method #1:

$$= \int u du$$

$$= \frac{u^2}{2} + C$$

$$= \frac{\sin^2 x}{2} + C$$

$$\left. \begin{array}{l} \text{let } u = \sin x \\ du = \cos x dx \end{array} \right\}$$

method #2:

$$= \int -u du$$

$$\left. \begin{array}{l} \text{let } u = \cos x \\ du = -\sin x dx \end{array} \right\}$$

$$= \int -u \, du$$

$$= -\frac{u^2}{2} + C$$

$$= -\frac{\cos^2 x}{2} + C$$

method #3 :

$$\int \sin x \cos x \, dx = \int \frac{1}{2} \sin 2x \, dx$$

$$= -\frac{1}{4} \cos 2x + C$$