

NAME: \_\_\_\_\_

KEY Period: \_\_\_\_\_

SUBSET #501 NO CALCULATOR.

1.  $\frac{d}{dx} \cos 3x = -3 \sin(3x)$

2.  $\frac{d}{dx} e^{x^2} = 2xe^{x^2}$

3.  $\frac{d}{dx} \tan(x) = \sec^2 x$

4.  $\int x^7 dx = \frac{x^8}{8} + C$

5.  $\int \frac{1}{x} dx = \ln|x| + C$

6.  $\int \cos(2x) dx = \frac{\sin(2x)}{2} + C$

7.  $\int \sin(2x) dx = -\frac{\cos(2x)}{2} + C$

8.  $\int (\sin x)^{12} \cdot \cos x dx = \frac{(\sin x)^{13}}{13} + C$   
TRY  $u = \sin x$ .

9.  $2 \int (x^2+1)^{12} \cdot x dx = \frac{(x^2+1)^{13}}{13} + C$

10.  $\int \frac{(\ln x)^2}{x} dx = \frac{(\ln|x|)^3}{3} + C$

TRY  $u = \ln x$ .

$u = \ln x$

$\frac{du}{dx} = \frac{1}{x}$

$$\int u^2 \cdot du = \frac{u^3}{3} + C$$
$$= \frac{(\ln(x))^3}{3} + C$$