

## Review Ch 8.1 – Ch 9.6

Derivatives and Integrals of Inverse Trig Functions :

1.  $y = \sin^{-1}(x^3)$  Find  $\frac{dy}{dx}$

2.  $y = \sec^{-1}(x^7)$  Find  $\frac{dy}{dx}$

3.  $y = \tan^{-1}(\sqrt{x})$  Find  $\frac{dy}{dx}$

4.  $\int \frac{e^x}{4 + e^{2x}} dx =$

5.  $\int \frac{dx}{\sqrt{2-x^2}} =$

6.  $\int \frac{1}{x\sqrt{4x^2-9}} dx =$

Integration by Parts:

7.  $\int \ln x dx =$

8.  $\int x \sin(3x+1) dx =$

9.  $\int x^2 e^{3x} dx =$

10.  $\int_0^1 \tan^{-1} x dx =$

Partial Fractions:

11.  $\int \frac{2x+4}{x^3-2x^2} dx =$

Integrating powers of sine and cosine:

12.  $\int \sin^4 x \cos^3 x dx =$

Integrating powers of  $\tan x$  and  $\sec x$ :

13.  $\int \tan x dx =$

14.  $\int \sec x dx =$

Trig Substitution:

15.  $\int \frac{\sqrt{x^2-25}}{x} dx =$