

Unit 5 Review

#1) $\int 2x \, dx$

#2) $\int \frac{10}{x} \, dx$

#3) $\int \frac{3}{x^2} \, dx$

#4) $\int \frac{x^2+7x}{x} \, dx$

#5) $\int_{-2}^{-1} \frac{dx}{(2x+3)^4}$

#6) $\int t^{10}(t-10) \, dt$

#7) $\int x^2\sqrt{x^3+7} \, dx$

#8) $\int_0^4 x\sqrt{16-3x} \, dx$

#9) $\int \frac{x}{(x-5)^3} \, dx$

#10) $\int \frac{(\ln x)^2}{x} \, dx$

#11) $\int \frac{e^{2y}}{e^{2y}+1} \, dy$

#12) $\int \frac{e^{\sqrt{x}}}{\sqrt{x}} \, dx$

#13) $\int_{-\pi/2}^{\pi/2} \sin x \, dx$

#14) $\int_{-\pi/2}^{\pi/2} \cos x \, dx$

#15) $\int \csc^2 3t \, dt$

#16) $\int \cot(7t) \, dt$

$$\#17) \int \frac{\cos x}{1 + \sin^2 x} dx$$

$$\#18) \int_{\pi/6}^{2\pi/3} \sin^2(\theta) \cos(\theta) d\theta$$

$$\#19) \int_0^{\pi/4} (1 + \tan t)^3 \sec^2 t dt$$

$$\#20) \int \frac{\cos x}{\sqrt{1 + \sin x}} dx$$

$$\#21) \int_0^{2\pi} |\sin x| dx$$

$$\#22) \int_0^1 \frac{1}{x^2 + 1} dx$$

$$\#23) \int \frac{x^3}{\sqrt{x^2 + 1}} dx$$

$$\#24) \int \frac{x}{\sqrt{1 - x^4}} dx$$

$$\#25) \int \frac{1}{\sqrt{1 - 4x^2}} dx$$

$$\#26) \int_{-1}^1 \frac{x + x^3 + x^5}{1 + x^2 + x^4} dx$$

$$\#27) \text{ Find the derivative of } \int_{2x}^{3x+1} \sin(t^4) dt$$

$$\#28) \text{ Find the derivative of } y = \int_{\sqrt{x}}^x \frac{e^t}{t} dt$$

$$\#29) \text{ Given a function defined by } F(x) = \int_0^x (t^3 + 5t) dt$$

Find $F(3)$.