

$$47. \quad F(x) = \int_{\pi}^{ax} \cos e^t dt$$

$$\cos e^{\ln x} \cdot \frac{1}{x}$$

$$\frac{\cos x}{x}$$

$$8. \quad \frac{200e^{-4x}}{200} = \frac{15}{200}$$

$$\ln e^{-4x} = \ln \frac{3}{40}$$

$$-4x = -\ln \frac{3}{40}$$

$$43. \quad y = \frac{2}{e^x + e^{-x}}$$

$$y' = \frac{(e^x + e^{-x})(0) - 2(e^x - e^{-x})}{(e^x + e^{-x})^2}$$

$$= \frac{-2(e^x - e^{-x})}{(e^x + e^{-x})^2}$$

$$(x - x_1) m = y - y_1$$

$$(1 - x) (-1) = y - 1$$

$$e^{1-x}$$

$$1 \cdot e^{1-x}$$

5.4B e (Again)

WCIID? I can integrate e

$$A \int e^x dx = e^x + C$$

$$\text{Ex. } \int e^{3x+1} dx = \frac{1}{3} \int e^u du$$

$$u = 3x + 1$$

$$du = 3 dx$$

$$\frac{1}{3} e^u + C$$

$$\frac{1}{3} e^{3x+1} + C$$

$$\text{Ex. } \int 5x e^{-x^2} dx = \frac{-5}{2} \int e^u du$$

$$u = -x^2$$

$$du = -2x dx$$

$$\frac{-5}{2} e^{-x^2} + C$$

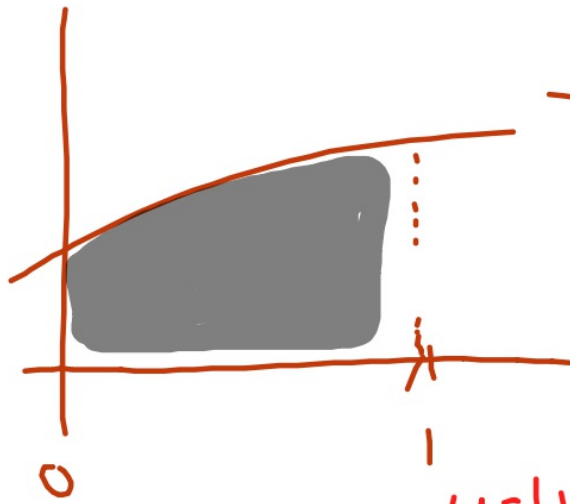
$$\text{Ex. } \int \sin x e^{\cos x} dx = - \int e^u du$$

$$u = \cos x$$

$$du = -\sin x dx$$

$$-e^{\cos x} + C$$

B.



$$\frac{e^x}{1+e^x}$$

$$\int_0^1 \frac{e^x}{1+e^x} dx$$

$$u = 1+e^x \quad \int \frac{1}{u} du$$
$$du = e^x dx \quad \ln(1+e^x) \Big|_0^1$$

$$\ln(1+e^1) - \ln(1+e^0)$$

$$\ln(1+e) - \ln 2$$

$$\approx .6201$$

p. 358

85-93 odd

97, 99, 101, 105, 106

113, 114