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lect/lect engineering.  
Aleng 02/043

86

Mat 104

$$x \quad dw = x^{1/2} dx$$

$$\int x dx \quad y = \frac{x^{3/2}}{3/2}$$

$$dx = \frac{x^{3/2}}{3/2} \rightarrow \ln x - \int \frac{x^{3/2}}{3/2} \cdot \frac{1}{x} dx$$

$$= \frac{x^{3/2}}{3/2} \ln x - \frac{2}{3} \int x^{1/2} dx$$

$$\frac{2x^{3/2}}{3} \ln x - \frac{2}{3} \cdot \frac{x^{3/2}}{3/2}$$

$$\frac{2x^{3/2}}{3} \ln x - \frac{4x^{3/2}}{9} + c$$

35E

$$\cos a \cos t = 2 \int \cos b t \cos t$$

$$\int \cos a t \cos b t = \frac{1}{2} [\cos(a-b)t + \cos(a+b)t]$$

$$\cos t = 2 \int \frac{1}{2} [\cos(b-1)t + \cos(b+1)t]$$

$$2 \times \frac{1}{2} \int \cos 5t + \cos 7t \, dt$$

$$= \frac{1}{5} \sin 5t + \frac{1}{7} \sin 7t$$

34n

$$= \cos^2 t + \cos^2 t$$

$$(1 - \sin^2 t)(1 - \sin^2 t)$$