

Section 28.3: cont'd:

Tuesday, February 05, 2013
10:33 AM

one last example:

$$\int_0^4 \frac{e^{-\sqrt{x}}}{\sqrt{x}} dx$$

$$\text{let } u = -\sqrt{x} = -x^{1/2}$$
$$du = -\frac{1}{2} x^{-1/2} dx$$

$$= -\frac{1}{2} \frac{dx}{\sqrt{x}}$$

$$= \int_{x=0}^{x=4} -2 e^u du$$

$$= -2 e^u \Big|_{x=0}^{x=4}$$

$$= -2 e^{-\sqrt{x}} \Big|_{x=0}^{x=4}$$

$$= -2 e^{-2} + 2 e^0$$

$$= -2 e^{-2} + 2$$

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$$2 - \frac{2}{e^2}$$