

Integral of $\sin(x) + \cos(x)$

Consider the following integral:

$$\int_0^{\pi} \sin(x) + \cos(x) dx.$$

- a) Use what you have learned about definite integrals to guess the value of this integral.
- b) Find antiderivatives of $\cos(x)$ and $\sin(x)$. Check your work.
- c) Use the addition property of integrals to compute the value of:

$$\int_0^{\pi} \sin(x) + \cos(x) dx.$$

Check your work by comparing to your answer from part a.

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18.01SC Single Variable Calculus
Fall 2010

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