A table of derivatives and anti-derivatives

This example is based upon a nice example in the Pythontex gallery, see https://github.com/gpoore/pythontex/. It uses a tagged block to capture the Sympy output for later use in the body of the LaTeX table.

```
from sympy import *
    var('x')
     # Create a list of functions to include in the table
    funcs = [['\sin(x)',r']],
                                      ['cos(x)',r'\\'],
                                                              ['tan(x)',r'\\'],
             ['asin(x)',r'\\[5pt]'], ['acos(x)',r'\\[5pt]'], ['atan(x)',r'\\[5pt]'],
             ['sinh(x)',r'\\'], ['cosh(x)',r'\\'],
                                                              ['tanh(x)',r'']]
     # pyBeg (CalculusTable)
10
     for func, eol in funcs:
        myddx = 'Derivative(' + func + ', x)'
12
        myint = 'Integral(' + func + ', x)'
13
        print(latex(eval(myddx)) + '&=' + latex(eval(myddx + '.doit()')) + r'\quad & \quad')
14
        print(latex(eval(myint)) + '&=' + latex(eval(myint + '.doit()')) + eol)
15
     # pyEnd (CalculusTable)
```

\begin{align*}
 \py {CalculusTable}
\end{align*}

$$\frac{d}{dx}\sin(x) = \cos(x)$$

$$\frac{d}{dx}\cos(x) = -\sin(x)$$

$$\frac{d}{dx}\tan(x) = \tan^2(x) + 1$$

$$\frac{d}{dx}a\sin(x) = \frac{1}{\sqrt{1 - x^2}}$$

$$\frac{d}{dx}a\cos(x) = -\frac{1}{\sqrt{1 - x^2}}$$

$$\frac{d}{dx}a\tan(x) = \frac{1}{x^2 + 1}$$

$$\frac{d}{dx}\sinh(x) = \cosh(x)$$

$$\frac{d}{dx}\cosh(x) = \sinh(x)$$

$$\frac{d}{dx}\tanh(x) = 1 - \tanh^2(x)$$

$$\int \sin(x) dx = -\cos(x)$$

$$\int \cos(x) dx = \sin(x)$$

$$\int \tan(x) dx = -\log(\cos(x))$$

$$\int \sin(x) dx = x \sin(x) + \sqrt{1 - x^2}$$

$$\int \cos(x) dx = x \cos(x) - \sqrt{1 - x^2}$$

$$\int \cot(x) dx = x \tan(x) - \frac{\log(x^2 + 1)}{2}$$

$$\int \sinh(x) dx = \cosh(x)$$

$$\int \cosh(x) dx = \sinh(x)$$

$$\int \tanh(x) dx = x - \log(\tanh(x) + 1)$$