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 Mathematica output for later use in the body of the LaTeX table.

```
(* Create a list of functions to include in the table *)
fun = {Sin[x],      Cos[x],      Tan[x],
       ArcSin[x],   ArcCos[x],   ArcTan[x],
       Sinh[x],     Cosh[x],     Tanh[x]};

eol = {"\\\\" ,     "\\\\",      "\\\\",
       "\\\\[5pt]", "\\\\[5pt]", "\\\\[5pt]",
       "\\\\",      "\\\\",      " "};

ddxfun = D[#, x] & /@ fun;
intfun = Integrate[#, x] & /@ fun;

ddxfunHold = HoldForm[D[#, x]] & /@ fun;
intfunHold = HoldForm[Integrate[#, x]] & /@ fun;

(* mmaBeg (CalculusTable) *)
Do[Print[OutputForm[
   ToString[TeXForm[ddxfunHold[[i]]]] <> "&=" <>
   ToString[TeXForm[ddxfun[[i]]]]     <> "\\quad & \\quad"
   ToString[TeXForm[intfunHold[[i]]]] <> "&=" <>
   ToString[TeXForm[intfun[[i]]]]     <>
   eol[[i]]
   ]], {i,1,9}]
(* mmaEnd (CalculusTable) *)
```

```
\begin{align*}
   \mma {CalculusTable}
\end{align*}
```

$$\frac{\partial \sin(x)}{\partial x} = \cos(x)$$
$$\frac{\partial \cos(x)}{\partial x} = -\sin(x)$$
$$\frac{\partial \tan(x)}{\partial x} = \sec^2(x)$$
$$\frac{\partial \sin^{-1}(x)}{\partial x} = \frac{1}{\sqrt{1-x^2}}$$
$$\frac{\partial \cos^{-1}(x)}{\partial x} = -\frac{1}{\sqrt{1-x^2}}$$
$$\frac{\partial \tan^{-1}(x)}{\partial x} = \frac{1}{x^2+1}$$
$$\frac{\partial \sinh(x)}{\partial x} = \cosh(x)$$
$$\frac{\partial \cosh(x)}{\partial x} = \sinh(x)$$
$$\frac{\partial \tanh(x)}{\partial x} = \operatorname{sech}^2(x)$$

$$\int \sin(x)\,dx = -\cos(x)$$
$$\int \cos(x)\,dx = \sin(x)$$
$$\int \tan(x)\,dx = -\log(\cos(x))$$
$$\int \sin^{-1}(x)\,dx = \sqrt{1-x^2} + x\sin^{-1}(x)$$
$$\int \cos^{-1}(x)\,dx = x\cos^{-1}(x) - \sqrt{1-x^2}$$
$$\int \tan^{-1}(x)\,dx = x\tan^{-1}(x) - \frac{1}{2}\log\left(x^2+1\right)$$
$$\int \sinh(x)\,dx = \cosh(x)$$
$$\int \cosh(x)\,dx = \sinh(x)$$
$$\int \tanh(x)\,dx = \log(\cosh(x))$$