Using \Input

This simple example shows how \Input can be used in include other LaTeX sources within the host source. Note the use of nested \Input's. The merged file can be inspected by running

```
merge-src.py -i example-10.tex -o merged.tex
```

from the command line. The merged file will be named `merged.tex`.

Source of example-10.tex

```
\Input{./example-10/limits/limits.tex}
\Input{./example-10/calculus/calculus.tex}
```

Source of example-10/limits/limits.tex

```
\section*{Limits}

\begin{python}

    from sympy import *
    a, n, x, dx = symbols('a n x dx')
    ans = limit(sin(4*x)/x,x,0)                 # py (ans.301,ans)
    ans = limit(2**x/x,x,oo)                    # py (ans.302,ans)
    ans = limit(((x+dx)**2 - x**2)/dx, dx,0)    # py (ans.303,ans)
    ans = limit((4*n + 1)/(3*n - 1),n,oo)       # py (ans.304,ans)
    ans = limit((1+(a/n))**n,n,oo)              # py (ans.305,ans)

\end{python}

\begin{align*}
    &\py*{ans.301}\\
    &\py*{ans.302}\\
    &\py*{ans.303}\\
    &\py*{ans.304}\\
    &\py*{ans.305}
\end{align*}
```

Source of example-10/calculus/calculus.tex

```
\Input{./example-10/calculus/derivs/derivs.tex}
\Input{./example-10/calculus/integrals/integrals.tex}
```

Source of example-10/calculus/derivs/derivs.tex

```
\section*{Differentiation}

\begin{python}

  ans = diff(x*sin(x),x)                          # py (ans.501,ans)
  ans = diff(x*sin(x),x).subs(x,pi/4)             # py (ans.502,ans)

\end{python}


\begin{align*}
  &\py*{ans.501}\\
  &\py*{ans.502}
\end{align*}
```

Source of example-10/calculus/integrals/integrals.tex

```
\section*{Integration}

\begin{python}

  a, b, x, y = symbols('a b x y')
  ans = integrate(2*sin(x)**2, (x,a,b))           # py (ans.503,ans)
  ans = Integral(2*exp(-x**2), (x,0,oo))          # py (lhs.504,ans)
  ans = ans.doit()                                # py (ans.504,ans)
  ans = Integral(Integral(x**2 + y**2, (y,0,x)), (x,0,1))   # py (lhs.505,ans)
  ans = ans.doit()                                # py (ans.505,ans)

\end{python}

\begin{align*}
  &\py*{ans.503}\\
   \py{lhs.504}&=\Py{ans.504}\\
```

```
    \py{lhs.505}&=\Py{ans.505}
\end{align*}
```

Limits

```python
from sympy import *
a, n, x, dx = symbols('a n x dx')
ans = limit(sin(4*x)/x,x,0)              # py (ans.301,ans)
ans = limit(2**x/x,x,oo)                 # py (ans.302,ans)
ans = limit(((x+dx)**2 - x**2)/dx, dx,0) # py (ans.303,ans)
ans = limit((4*n + 1)/(3*n - 1),n,oo)    # py (ans.304,ans)
ans = limit((1+(a/n))**n,n,oo)           # py (ans.305,ans)
```

$$\text{ans.301} := (??)$$
$$\text{ans.302} := (??)$$
$$\text{ans.303} := (??)$$
$$\text{ans.304} := (??)$$
$$\text{ans.305} := (??)$$

Differentiation

```python
ans = diff(x*sin(x),x)                   # py (ans.501,ans)
ans = diff(x*sin(x),x).subs(x,pi/4)      # py (ans.502,ans)
```

$$\text{ans.501} := (??)$$
$$\text{ans.502} := (??)$$

Integration

```
a, b, x, y = symbols('a b x y')
ans = integrate(2*sin(x)**2, (x,a,b))                    # py (ans.503,ans)
ans = Integral(2*exp(-x**2), (x,0,oo))                   # py (lhs.504,ans)
ans = ans.doit()                                         # py (ans.504,ans)
ans = Integral(Integral(x**2 + y**2, (y,0,x)), (x,0,1))  # py (lhs.505,ans)
ans = ans.doit()                                         # py (ans.505,ans)
```

$$\texttt{ans.503} := (??)$$

$$(??) = (??) \qquad\qquad (\texttt{ans.504})$$

$$(??) = (??) \qquad\qquad (\texttt{ans.505})$$