Step-by-step integration

This is another nice example drawn from the Pythontex gallery, see https://github.com/gpoore/pythontex.

It shows the step-by-step computations of a simple triple integral.

```
xmax = 2;  ymax = 3;  zmax = 4;
xmin = 0;  ymin = 0;  zmin = 0;

fun = f[x,y,z];

mytmp = HoldForm[Integrate[#1, {z, #6, #7},
                               {y, #4, #5},
                               {x, #2, #3}]] & @@ {fun, xmin, xmax, ymin, ymax, zmin, zmax};   (* mma(lhs.01,mytmp) *)

fun = x y + y Sin[z] + Cos[x+y];

myint = HoldForm[Integrate[#1, {z, #6, #7},
                               {y, #4, #5},
                               {x, #2, #3}]] & @@ {fun, xmin, xmax, ymin, ymax, zmin, zmax};   (* mma(rhs.01,myint) *)

myansx =          Integrate[#1, {x, #2, #3}] & @@ {fun, xmin, xmax};
myintx = HoldForm[Integrate[#1, {z, #4, #5},
                                {y, #2, #3}]] & @@ {myansx, ymin, ymax, zmin, zmax};          (* mma(rhs.02,myintx) *)

myansxy =          Integrate[#1, {y, #2, #3}]  & @@ {myansx, ymin, ymax};
myintxy = HoldForm[Integrate[#1, {z, #2, #3}]] & @@ {myansxy, zmin, zmax};                    (* mma(rhs.03,myintxy) *)

myansxyz = Integrate[#1, {z, #2, #3}] & @@ {myansxy, zmin, zmax};                             (* mma(rhs.04,myansxyz) *)

myapprox = N[myansxyz,15];                                                                    (* mma(rhs.05,myapprox) *)
```

$$
\begin{aligned}
\int_0^4 \int_0^3 \int_0^2 f(x,y,z)dxdydz &= \int_0^4 \int_0^3 \int_0^2 (xy + \cos(x+y) + y\sin(z))dxdydz \\
&= \int_0^4 \int_0^3 2(y + \cos(1+y)\sin(1) + y\sin(z))dydz \\
&= \int_0^4 (8 + \cos(2) + \cos(3) - \cos(5) + 9\sin(z))\, dz \\
&= 41 + 4\cos(2) + 4\cos(3) - 9\cos(4) - 4\cos(5) \\[8pt]
&\approx 40.1235865133293
\end{aligned}
$$

```
\begin{align*}
   \mma{lhs.01} &= \mma{rhs.01}\\
                &= \mma{rhs.02}\\
                &= \mma{rhs.03}\\
                &= \mma{rhs.04}\\[8pt]
                &\approx \mma{rhs.05}
\end{align*}
```