What we're aiming at:

$$\sum_{i=1}^{n}(z_i)^3 \left\{ \int_{x=0,y=0}^{x=\pi/2,y=\pi/2} \sqrt{\left(x^2 + y^2\right)} \, f(x,y,z_i)\,\mathrm{d}x\,\mathrm{d}y \right\} = \frac{\mathcal{A}}{\mathcal{B}}.$$

Build it up piece-by-piece:

- First the right-hand-side:

```
\frac{\mathcal{A}}{\mathcal{B}}.
```

giving

$$\frac{\mathcal{A}}{\mathcal{B}}.$$

- Next, the factors of the integral's kernel,

```
\sqrt{\left(x^2 + y^2\right)}

f(x,y,z_i).
```

yielding

$$\sqrt{\left(x^2 + y^2\right)} \qquad \text{and} \qquad f(x,y,z_i).$$

- Notice that the 'd' in the infinitesimals is an operator, not a variable, so `\mathrm{d}x`, and put the pieces together, with appropriate spacing:

```
\sqrt{\left(x^2 + y^2\right)} \, f(x,y,z_i)\,\mathrm{d}x\,\mathrm{d}y.
```

giving

$$\sqrt{\left(x^2 + y^2\right)} \, f(x,y,z_i)\,\mathrm{d}x\,\mathrm{d}y.$$

- Finally, the integral with bounds and curly brackets,

```
\left\{     \int_{x=0,y=0}^{x=\pi/2,y=\pi/2}    \right\}
```

giving

$$\left\{ \int_{x=0,y=0}^{x=\pi/2,y=\pi/2} \right\}$$

and the sum:

```
\sum_{i=1}^{n} (z_i)^3.
```

yielding

$$\sum_{i=1}^{n}(z_i)^3.$$

Putting it all together, we have:

```
% -- notice the indented layout which helps us ``debug'' the equation :
\[
    \sum_{i=1}^{n} (z_i)^3
        \left\{
            \int_{x=0,y=0}^{x=\pi/2,y=\pi/2}
                \sqrt{\left(x^2 + y^2\right)} \,
                f(x,y,z_i)\,\mathrm{d}x\,\mathrm{d}y
        \right\}
%%
    = \frac{\mathcal{A}}{\mathcal{B}}
\]
```