

Expressions with matrices such as

$$\mathbf{Q} = \begin{bmatrix} a & b & c \\ d & e & f \\ g & h & i \end{bmatrix}$$

can be generated using the `array` environment. The above expression was obtained using the following code:

```
\[ \mathbf{Q} = \left[
\begin{array}{ccc}
a & b & c \\
d & e & f \\
g & h & i
\end{array}
\right]
```

We can combine the `array` environment with our `\left` and `\right` delimiters to obtain expressions such as

$$y = \begin{cases} 0 & \text{if } x \leq 0, \\ x^2 & \text{if } x > 0. \end{cases}$$

This expression was generated by the following code:

```
\[
y = \left[
\begin{array}{rcl}
0 & \text{if } x \leq 0, & \\
x^2 & \text{if } x > 0. &
\end{array}
\right].
```