Broadcasting in Python

Cals in 100g.

	Apples	Beef	Eggs	Potatoes
Carb	56.0	0.0	4.4	68.0
Pro	1.2	104.0	52.0	8.0
Fat	1.8	135.0	99.0	0.9

$= A_{(3,4)}$

Calc. % of cals from C,P,F, w/out expl. for-loops

```
cal = A.sum(axis=0)
percentage = 100*A/(cal.reshape(1,4))
```

→ not necessarily necessary

$$\begin{bmatrix}1\\2\\3\\4\end{bmatrix} + 100 \begin{bmatrix}100\\100\\100\\100\end{bmatrix} = \begin{bmatrix}101\\102\\103\\104\end{bmatrix}$$

$$\underset{(m,n)}{\begin{bmatrix}1&2&3\\4&5&6\end{bmatrix}} + \cancel{\begin{bmatrix}100&200&300\end{bmatrix}} \begin{bmatrix}100&200&300\\100&200&300\end{bmatrix} = \dots$$

$$\underset{(m,n)}{\begin{bmatrix}1&2&3\\4&5&6\end{bmatrix}} + \underset{(m,1)}{\cancel{\begin{bmatrix}100\\200\end{bmatrix}}} \underset{(m,n)}{\begin{bmatrix}100&100&100\\200&200&200\end{bmatrix}} = \dots$$

Generally:

(m,n)	$+ - * /$	$(1,n)$	$\rightarrow (m,n)$
Matrix	$/$	$(m,1)$	$\rightarrow (m,n)$