Testing and examples of defined macros

Some quick notes on my macros.

Command	Effect
`\eq{ ... }`	`\begin{equation} .... \end{equation}`
`\mat{1&2\\4&5}`	$\begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix}$
`\matx{A}{m}{n}`	$\begin{pmatrix} A_{11} & A_{12} & \cdots & A_{1n} \\ A_{21} & A_{22} & \cdots & A_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ A_{m1} & A_{m2} & \cdots & A_{mn} \end{pmatrix}$
`\rowx{A}{n}`	$\begin{pmatrix} A_1 & A_2 & \dots & A_n \end{pmatrix}$
`\colx{A}{m}`	$\begin{pmatrix} A_1 \\ A_2 \\ \vdots \\ A_m \end{pmatrix}$
`\row{A}_i`	$\mathtt{r}\,(A)_i$
`\col{A}_j`	$\mathtt{c}\,(A)_j$

A matrix is a 3x3 grid

$$A = \begin{pmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{pmatrix} \tag{1}$$

but now I can write

$$A = \begin{pmatrix} a_{11} & a_{12} & \cdots & a_{1n} \\ a_{21} & a_{22} & \cdots & a_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ a_{m1} & a_{m2} & \cdots & a_{mn} \end{pmatrix} \tag{2}$$

or for 3x3

$$\begin{pmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{pmatrix} \tag{3}$$

. Finally, I need to define column and row operators. How about this

$$\mathtt{r}\,(A)_i = \begin{pmatrix} A_{i1} & A_{i2} & \dots & A_{in} \end{pmatrix} \tag{4}$$

$$\mathtt{c}\,(A)_j = \begin{pmatrix} A_{1j} \\ A_{2j} \\ \vdots \\ A_{mj} \end{pmatrix} \tag{5}$$

Now see this ¯