

$$\begin{array}{c} A \\ \begin{array}{|c|c|c|} \hline 1 & 2 & 3 \\ \hline 4 & 5 & 6 \\ \hline 7 & 8 & 9 \\ \hline \end{array} \end{array} \times \begin{array}{c} x \\ \begin{array}{|c|} \hline 1 \\ \hline 2 \\ \hline 3 \\ \hline \end{array} \end{array} = \begin{array}{c} Ax \\ \begin{array}{|c|} \hline 14 \\ \hline 32 \\ \hline 50 \\ \hline \end{array} \end{array}$$

$$\begin{array}{c} x \\ \begin{array}{|c|c|c|} \hline 1 & 2 & 3 \\ \hline \end{array} \end{array} \times \begin{array}{c} A \\ \begin{array}{|c|c|c|} \hline 1 & 2 & 3 \\ \hline 4 & 5 & 6 \\ \hline 7 & 8 & 9 \\ \hline \end{array} \end{array} = \begin{array}{c} A^T x \\ \begin{array}{|c|c|c|} \hline 30 & 36 & 42 \\ \hline \end{array} \end{array}$$

$$\begin{array}{c} A^T \\ \begin{array}{|c|c|c|} \hline 1 & 4 & 7 \\ \hline 2 & 5 & 8 \\ \hline 3 & 6 & 9 \\ \hline \end{array} \end{array} \times \begin{array}{c} x \\ \begin{array}{|c|} \hline 1 \\ \hline 2 \\ \hline 3 \\ \hline \end{array} \end{array} = \begin{array}{c} A^T x \\ \begin{array}{|c|} \hline 30 \\ \hline 36 \\ \hline 42 \\ \hline \end{array} \end{array}$$