Starred Theorems

for Math 210 Exam 2

1. Suppose $\det A \neq 0$. Then

   (a) $A \operatorname{adj}(A) = \det(A)I$

   (b) $A^{-1} = \dfrac{1}{\det(A)} \operatorname{adj}(A).$

2. If E is an elementary $n \times n$ matrix and B any $n \times n$ matrix then $\det(EB) = \det E \det B$.

3. Let $\mathbf{u}$ and $\mathbf{v}$ be nonzero vectors in 2-space or 3-space with angle θ between them. Then $\mathbf{u} \cdot \mathbf{v} = \|\mathbf{u}\| \, \|\mathbf{v}\| \cos \theta$.

4. Triangle inequality: Let $\mathbf{u}, \mathbf{v} \in \mathbb{R}^n$. Then $\|\mathbf{u} + \mathbf{v}\| \leq \|\mathbf{u}\| + \|\mathbf{v}\|$.