

Tests for invertibility of $J \in \mathbb{R}^{n \times n}$

- ~~$\det(J) \neq 0$~~
- $\text{rank}(J) = n$
- $\text{null}(J) = \{0\}$ $\text{null}(A) = \{x : Ax = 0\}$
- cols of J are lin. indep.
- rows of J are lin. indep.
- - 0 is not an eigenvalue of J
- 0 is not a singular value of J ⇔
- - 0 is not a pivot of J (G.E.)
- [- $\text{cond}(J) < \infty$]