

- (a) Let the matrix $\mathbf{X} \in \mathbb{R}^{n \times d}$ and $\mathbf{y} \in \mathbb{R}^n$ and note that $n > d$ and $\text{rank}(\mathbf{X} + \epsilon_{\mathbf{X}}) = d$, explain satisfying (5).

This is a det.