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Classifying singular K3 surfaces
A complex K3 surface is called singular if it has Picard number 20. Singular K3 surfaces behave in many ways like elliptic curves with complex multiplication. For instance, they are defined over some number field. After reviewing some classical results, as of Shioda-Inose and Shafarevich, we will discuss the problem which singular K3 surfaces actually can be defined over $\mathbb{Q}$.

