(1) Is "g" at the surface of a gold nucleus greater or less than 980 cm s\(^{-2}\)?

The mass of a gold nucleus is roughly \(3 \times 10^{-22}\) g. At a distance of, say, \(10^{-12}\) cm "g", that is, \(GM/r^2\), would be \(6 \times 10^{-8} \times 3 \times 10^{-22} / 10^{-24}\), or \(2 \times 10^{-5}\) cm s\(^{-2}\), very much less than 980 cm s\(^{-2}\).