3-3. A coupling connects the two shafts as shown. The torque T applied on the shafts follows a normal distribution of $T \sim N\left(150,\, 15^2\right)\,\mathrm{N\cdot m}$. Each bolt has a diameter $d = 0.016\,\mathrm{m}$, and the bolts are uniformly distributed at the radius $R = 0.025\,\mathrm{m}$. If the allowable shear stress of the bolt is $\tau_a \sim N\left(10,\, 0.8^2\right)\,\mathrm{MPa}$, determine how many bolts the coupling should have to make sure that the probability of failure of each bolt is less than 10^{-6}. Assume that T and τ_a are independent, and the shear stress in the bolts is uniform. (**Ans.** $n = 6$)