69. A steel tube in torsion has a thickness of $t = 8$ mm and a length of $l \sim N(600, 0.1^2)$ mm. It has a round section with a diameter of $d = 40$ mm. The shear modulus is $G = 80$ GPa. If the allowable shear stress is $\tau_a \sim N(60, 6^2)$ MPa, estimate the mean and standard deviation of the angle of twist using FOSM. Note that l and τ_a are independent.

Answer: $\mu_Y = 2.81(10^{-2})$, $\sigma_Y = 2.81(10^{-3})$