36. A steel ball is subjected to a force $F \sim N(100,\ 10^2)$ N and is placed against a steel plate. The diameter, modulus of elasticity, and Poisson's ratio are $d \sim N(80,\ 0.1^2)$ mm, $E = 207$ GPa and $\nu = 0.3$, repectively. What is the mean and standard deviation of the maximum pressure that occurs at the contact area? Note that d and F are independent.

Answer: $\mu_p = 5.39(10^8)$ Pa, $\sigma_p = 1.80(10^7)$ Pa

F