8-5. The steel bar $BC$ has a rectangular cross section as shown in the figure. It is pin connected at its ends. The force $P$ acting on the bar $AB$ follows a normal distribution $P \sim N(2.7, 0.3^2)$ kN and the modulus of elasticity follows $E \sim N(220, 30^2)$ GPa. Determine the probability of falure of the bar $BC$ caused by $x$-$x$ axis buckling. Assume that $E$ and $P$ are independent. (**Ans.** $p_f = 1.2 \times 10^{-4}$)