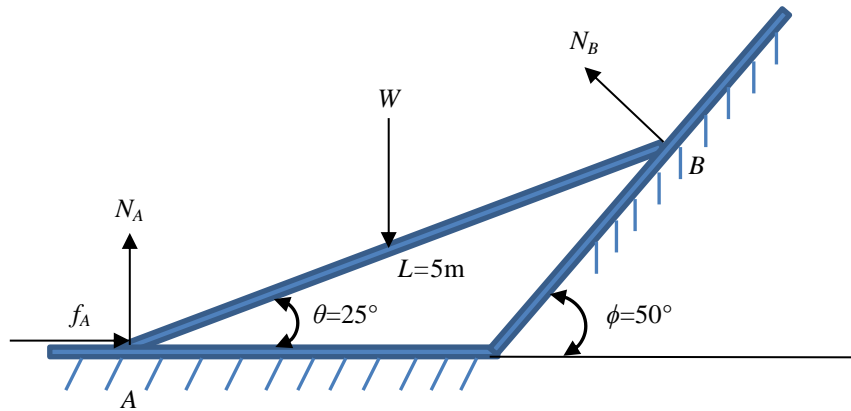5. Plate AB has a random weight $W \sim N(10, 0.02^2)$ lb due to manufacturing imprecision. Determine the distribution of normal forces at A and B if the inclined wall is smooth and the static coefficient of friction between the plate and horizontal wall is $\mu_s = 0.4$.

Answer: $N_A \sim N(7.487, 0.015^2)$ lb and $N_B \sim N(3.91, 0.0078^2)$ lb.