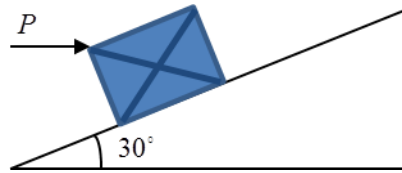16. A horizontal force P, which follows a normal distribution $P \sim N(100,5^2)$ lb, acts on a crate whose weight also follows a normal distribution $W \sim N(320,10^2)$ lb. If the maximum friction force follows a normal distribution $F_S \sim N(150,10^2)$ lb. Determine the probability that the crate will slip down. P, Fs, and W are distributed independently.

Solution: The probability that the crate will slip down is 0.0076.