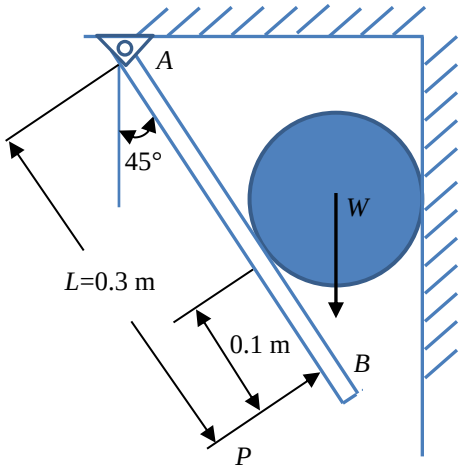
6. Rod *AB* is used to hold the ball. If the weight of the ball *W* and the applied force *P* exerted on the rod are independently and normally distributed with $W \sim N(5, 0.1^2)$ kg and $P \sim N(50, 0.5^2)$ N, respectively, determine the probability that the ball will fall. The wall is assuming to be smooth.



Answer

The probability that the ball might fall is

$$P = 0.02\%$$ **Ans**.