

4-9. The pendulum consists of a slender rod and a wooden block. A bullet hit the center of the block with a normally distributed velocity of $v \sim N(1000, 100^2)$ m/s and embeds itself into the block. If the masses of the rod, block and bullet are $m_1 = 2$ kg, $m_2 = 4$ kg and $m_3 = 10$ g, respectively, determine the probability that the angular velocity is smaller than 1 rad/s just after the impact. Assume the pendulum starts at rest.

Solution: $\Pr\{w_2 < 1\} = 0.18$

