

4-8. The disk is subjected to a normally distributed force $F \sim N(20, 2^2)$ N and a normally distributed couple moment $M \sim N(5, 0.5^2)$ N·m. The mass of the disk is $m = 50$ kg and the radius is $r = 0.2$ m. The disk starts from rest, determine the angular velocity of the disk after $t = 5$ s. Assume F and M are independent.

Solution: $w_2 \sim N(45, 3.2^2)$ rad/s

