3-8. The angular velocity of a disk increases uniformly from $\omega_0 = 2$ rad/s to $\omega = 30$ rad/s in 15 s. If the radius of the disk is normally distributed $r \sim N(0.4, 0.01^2)$ m, determine the distance point *A* travels during the time period.

**Solution**: $s \sim N(96, 2.4^2)$ m.