

1-8. A car is traveling on a straight street at a velocity $v_0 = 20$ m/s . After the driver observed a block $d = 120$ m ahead of the car, it takes the driver t_0 seconds to react and decelerate at $a = 2.5$ m/s².

1) For a normal driver, assume t_0 is normally distributed $t_0 \sim N(0.8, 0.08^2)$ s

2) For a drunk driver, assume $t_0 \sim N(3, 0.5^2)$ s

Determine the possibility that the car would hit the block.

Solutions: 1) $\Pr\{s > d\} = 0$, 2) $\Pr\{s > d\} = 0.98$.

