

88. Solution: C

Let  $X$  denote the waiting time for a first claim from a good driver, and let  $Y$  denote the waiting time for a first claim from a bad driver. The problem statement implies that the respective distribution functions for  $X$  and  $Y$  are

$$F(x) = 1 - e^{-x/6}, \quad x > 0 \quad \text{and}$$

$$G(y) = 1 - e^{-y/3}, \quad y > 0$$

Therefore,

$$\begin{aligned} \Pr[(X \leq 3) \cap (Y \leq 2)] &= \Pr[X \leq 3] \Pr[Y \leq 2] \\ &= F(3)G(2) = (1 - e^{-1/2})(1 - e^{-2/3}) = 1 - e^{-2/3} - e^{-1/2} + e^{-7/6} \end{aligned}$$