

Ch4 習題

6.

(1) 是離散

(2)

$$1 - P(X \leq 5) = 1 - 0.677 = 0.327$$

(3)

$$0.327$$

34.

令 X 為一個月內發生無預警停駛的次數，則 $X \sim P_0(0.5)$

(1)

$$P(X=0) = \frac{e^{-0.5} 0.5^0}{0!} = e^{-0.5} = 0.6065$$

(2)

$$P(X \geq 1) = 1 - P(X=0) = 1 - e^{-0.5} = 0.3935$$

35.

令 X 為 10 呎寬、30 呎長的玻璃氣泡瑕疵個數，則 $X \sim P_0(3)$

(1)

$$P(X=0) = \frac{e^{-3} 3^0}{0!} = 0.0498$$

(2)

$$P(X=2) = \frac{e^{-3} 3^2}{2!} = 0.224$$

39.

令 X 為上網時間長度，則 $X \sim N(5, 3.5)$

$$P(X > 8) = P\left(Z > \frac{8-5}{\sqrt{3.5}}\right) = P(Z > 0.86) = 1 - 0.8051 = 0.1949$$

Ch5 習題

8.

設 X 為林書豪在 2012 ~ 2013 年賽季每場的分，由題意可知 $X \sim N(13.2, 5.3)$

(1)

$$\begin{aligned} P(X > 15) &= P\left(\frac{X-13.2}{\sqrt{5.3}} > \frac{15-13.2}{\sqrt{5.3}}\right) = P(Z > 0.34) = 1 - P(Z \leq 0.34) \\ &= 1 - 0.6331 \\ &= 0.3669 \end{aligned}$$

(2)

$$\begin{aligned} P(\bar{X} > 15) &= P\left(\frac{\bar{X}-13.2}{\frac{\sqrt{5.3}}{\sqrt{16}}} > \frac{15-13.2}{\frac{\sqrt{5.3}}{\sqrt{16}}}\right) = P(Z > 1.36) = 1 - P(Z \leq 1.36) \\ &= 1 - 0.9131 \\ &= 0.0869 \end{aligned}$$