

Réponses du Quiz #4 AY2016-2017

1. $E(Y) = 3, E(Y^2) = 12, \text{Var}(Y) = 3.$

2. $p_{X_3}(x_3) = \frac{1}{\sqrt{18\pi}}e^{-(x_3+3)^2/18}, P(X_3 > -2.4) = Q(0.2) \approx 0.420740290560897$

3. $\Lambda_{\mathbf{X}} = \frac{1}{144} \begin{bmatrix} 11 & -1 \\ -1 & 11 \end{bmatrix} \approx \begin{bmatrix} 0.076389 & -0.00694 \\ -0.00694 & 0.076389 \end{bmatrix}$

4. (a) $\mathbf{m}_{\mathbf{Y}} = [3 \ 0], \Lambda_{\mathbf{Y}} = \begin{bmatrix} 49 & -23 \\ -23 & 21 \end{bmatrix}$

(b) $P(2Y_1 + 3Y_2 \geq 24) = Q\left(\frac{24-6}{\sqrt{109}}\right) \approx 0.04234604099655359.$