Statistiek 2018

Huiswerk # 2
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1. (a) verwachting:

$$E(X) = \sum_{\omega \in \Omega} X(\omega) P(\omega)$$

$$E(X) = -2 \times 0.2 + 0 \times 0.4 + 1 \times 0.2 + 2 \times 0.2 = 0.2$$

(b) variantie:

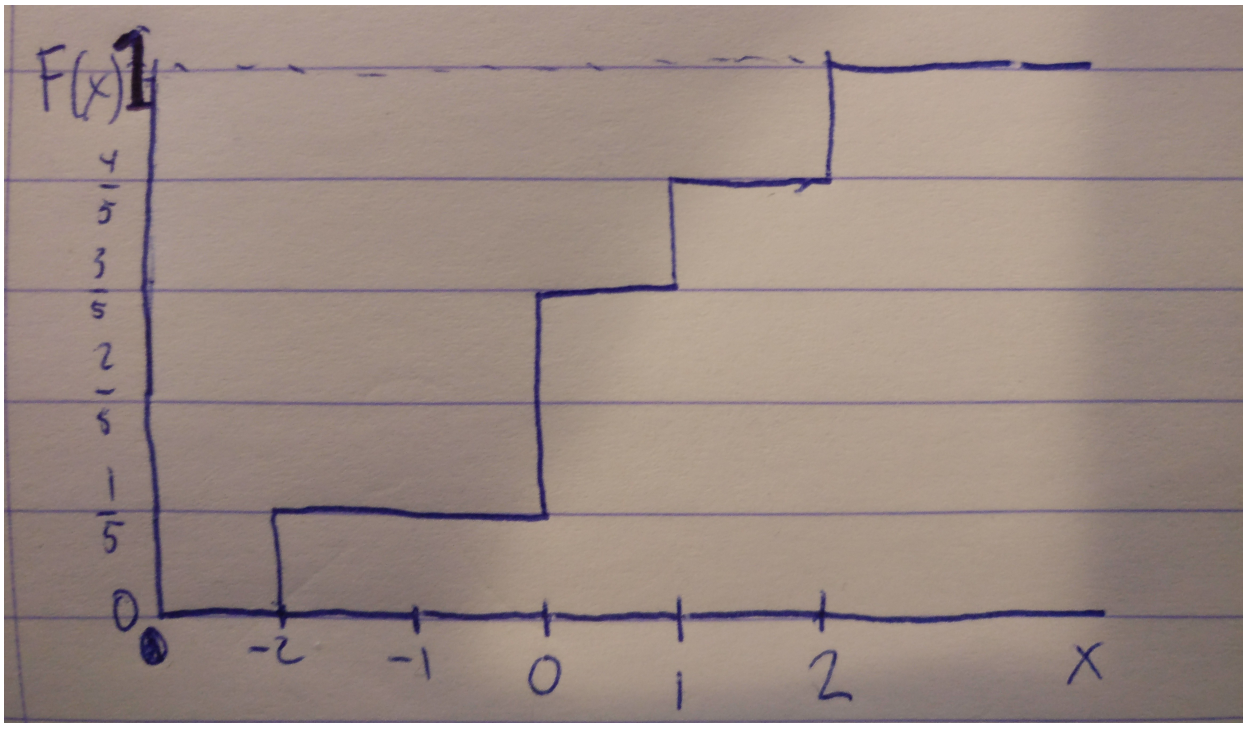
$$Var(X) = E(X^2) - (E(X))^2$$

$$Var(X) = (-2)^2 \times 0.2 + 0^2 \times 0.4 + 1^2 \times 0.2 + 2^2 \times 0.2 = 1.6$$

(c) standaardafwijking:

$$standaardafwijking = \sqrt{var(X)}$$

$$\sqrt{1.6} = 1.27$$

2. 

3. $Y = (X-1)^2$

$$\begin{pmatrix} (-2-1)^2 & (0-1)^2 & (1-1)^2 & (2-1)^2 \\ 0.2 & 0.4 & 0.2 & 0.2 \end{pmatrix} = \begin{pmatrix} 9 & 1 & 0 & 1 \\ 0.2 & 0.4 & 0.2 & 0.2 \end{pmatrix} = \begin{pmatrix} 9 & 1 & 0 \\ 0.2 & 0.6 & 0.2 \end{pmatrix}$$