Task 2.2)

$$S_{xx}(t_1,t_2) = \sum_{x(t_2)=x_j} \sum_{x(t_1)=x_i} x_i \cdot x_j \cdot P(x(t_1)=x_i \mid x(t_2)=x_j) * P(x(t_2)=x_j)$$

- $x(\xi_0, t_1) = -1$, $x(\xi_1, t_2) = 2$, $P(\xi_0) = 1/2$
  $x(\xi_1, t_1) = 3$, $x(\xi_1, t_2) = 1$, $P(\xi_1) = 1/3$
  $x(\xi_2, t_1) = 1$, $x(\xi_2, t_2) = -1$, $P(\xi_2) = 1/6$

- Determine $P(x(t_2) = x_j)$:
  $P(x(t_2) = 2) = P(\xi_0) = 1/2$
  $P(x(t_2) = 1) = P(\xi_1) = 1/3$
  $P(x(t_2) = -1) = 1/6$

- Determine $P(x(t_1) = x_i \mid x(t_2) = x_j)$:
  Conditional probability is 1, if $x(t_1) = x_i$ and $x(t_2) = x_j$ and 0 otherwise.

- $S_{xx}(t_1,t_2) =$
  $x(\xi_0, t_1) \cdot x(\xi_0, t_2) \cdot 1 \cdot P(\xi_0) +$
  $x(\xi_1, t_1) \cdot x(\xi_1, t_2) \cdot 1 \cdot P(\xi_1) +$
  $x(\xi_2, t_1) \cdot x(\xi_2, t_2) \cdot 1 \cdot P(\xi_2) =$
  $-1 \cdot 2 \cdot \frac{1}{2} + 3 \cdot 1 \cdot \frac{1}{3} - 1 \cdot 1 \cdot 1/6 = -1/6$