

$$\textcircled{1} \quad E[(s-c)^2] = (c - E[s])^2 + \text{Var}(s)$$

$$= E[s^2 - 2sc + c^2] = \underbrace{E[s^2] - E[s]^2}_{\text{Var } s} + \underbrace{E[s]^2 - 2cE[s] + c^2}_{(c - E[s])^2} \quad \square$$