Test 1 — Statistics

Marks: 6 Duration: 20 minutes

Steps carry marks, not the final answer. No marks will be given for a correct final answer without steps.

1. **(3 marks)** Suppose that $P(A \cap B) = 0.2$, $P(A) = 0.6$, and $P(B) = 0.5$. Compute $P(A^c \cup B^c)$. Justify every step using axioms or propositions proved in class.

2. **(3 marks)** A desk has three drawers. The first contains two gold coins, the second two silver coins, and the third one gold coin and one silver coin. A drawer is selected at random and a coin is drawn from it. Given that the coin drawn is silver, what is the probability that the other coin in that drawer is gold? Clearly define the events you use.