# Compound-event sample spaces

6 questions | 12 marks

Equivalent correct methods earn the corresponding marks.

**1.** List the sample space for two fair independent coin tosses. [1 mark]

Keep the first result H for two entries, then T.

**Answer:** HH, HT, TH, TT.

**2.** Find P(two heads) for two fair independent coin tosses. [2 marks]

Only HH is favourable out of four.

**Answer:** 1/4

**3.** A fair coin and an independent fair die are used. How many ordered outcomes are possible? [2 marks]

2 coin results times 6 die results gives 12.

**Answer:** 12

**4.** For a fair coin and independent fair die, find P(heads and die greater than 4). [2 marks]

H5 and H6 are favourable among 12 outcomes: 2/12=1/6.

**Answer:** 1/6

**5.** An equal spinner labelled A, B, C is spun twice independently. Find P(same letter). [2 marks]

AA, BB and CC are favourable among nine outcomes.

**Answer:** 1/3

**6.** Explain why zero, one and two heads are not equally likely in two fair independent tosses. [3 marks]

Group HH, HT, TH, TT by head count.

Their probabilities are 1/4, 1/2 and 1/4.

**Answer:** Exactly one head has two ordered outcomes; zero and two heads have one each.