Year 8 Probability - Topic test

Name: _____ Date: _____

15 questions | 36 marks | 45 minutes

Progressive questions combine techniques, interpretation and reasoned applications. All practice data are supplied.

No calculator needed.

1. If P(A)=0.37, find P(not A). [1 mark]

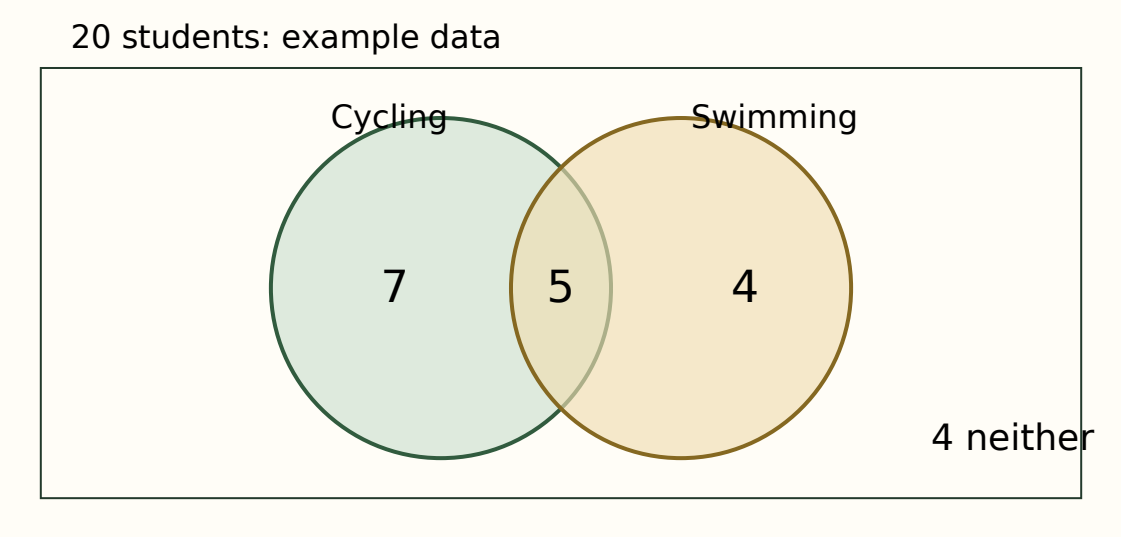
2. A bag has 5 red,2 blue,3 yellow counters. Find P(not blue). [2 marks]

3. List outcomes for two ordered coin tosses. [2 marks]

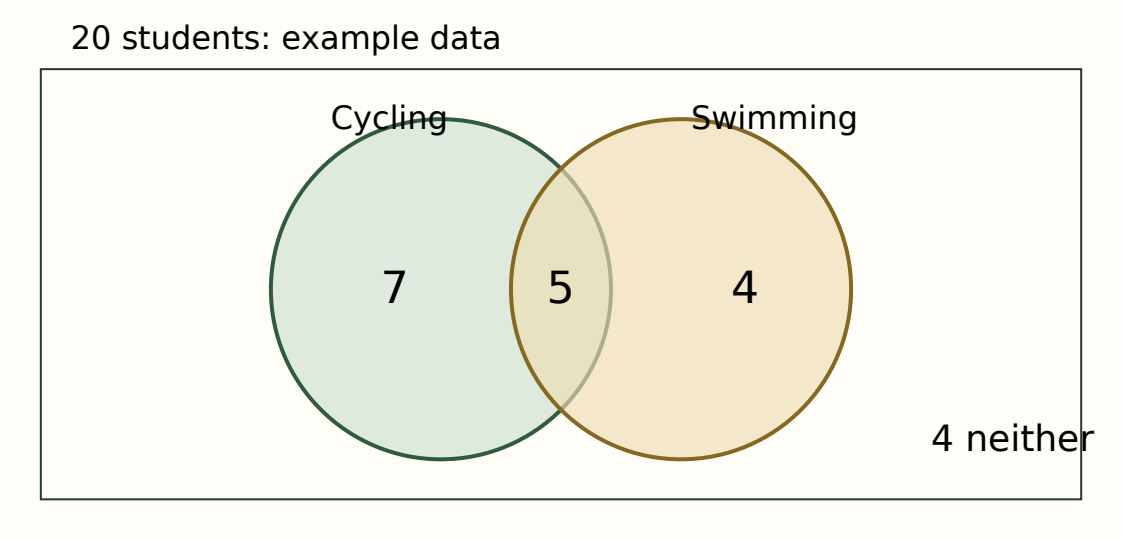
4. A fair coin then an independent fair 1,2,3 spinner is used. Find P(head and spinner 2). [2 marks]

5. Two independent fair spinners each show 1,2,3. List sum-4 pairs and their probability. [3 marks]

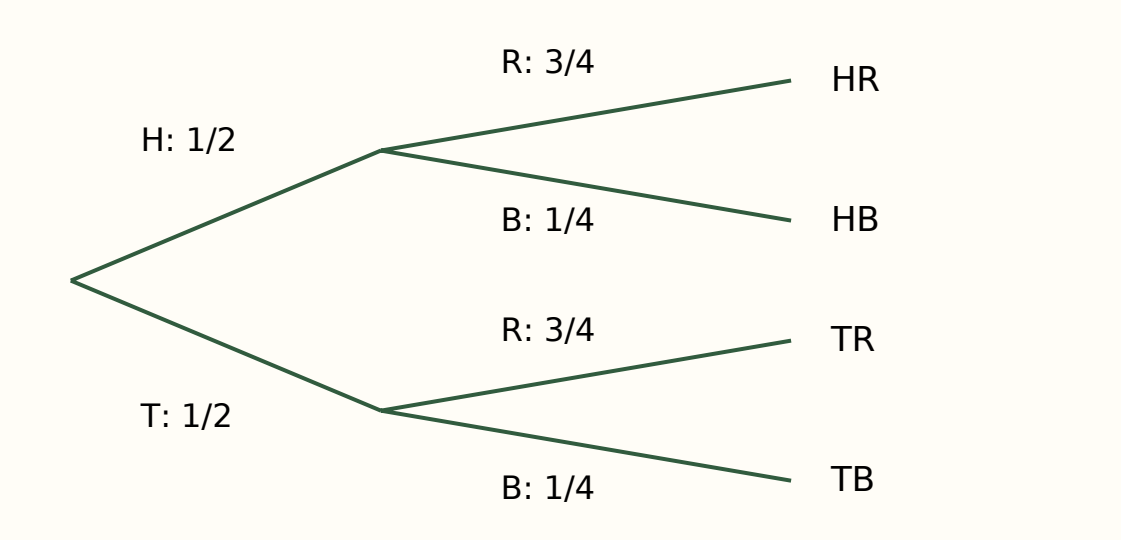
6. Use the Venn diagram. Find P(swimming but not cycling). [2 marks]



7. Use the Venn diagram. Find P(cycling or swimming). [2 marks]



8. Use the tree. Find P(head and red). [2 marks]



9. A bag has 2 red and 3 blue tokens. Draw a token at random, replace it, then draw again at random. Find P(two red). [2 marks]

10. Draw two tokens at random without replacement from B1, B2 and G. Find P(one of each colour). [3 marks]

11. Find P(odd or greater than 4) for a fair die. [2 marks]

12. A probability-1/4 event occurs 41 times in 160 trials. State expected frequency and experimental probability. [3 marks]

13. An event occurs 16 times in 40 trials and 44 times in 160 more. Find the combined frequency estimate. [3 marks]

14. Use the simulation table to estimate P(exactly one head) and compare with theory. [3 marks]

Original practice simulation: 24 trials of two fair coins

Outcome	Count
HH	5
HT	7
TH	6
TT	6

15. Design a two-dice simulation and explain why drawing sums uniformly from 2 to 12 fails. [4 marks]