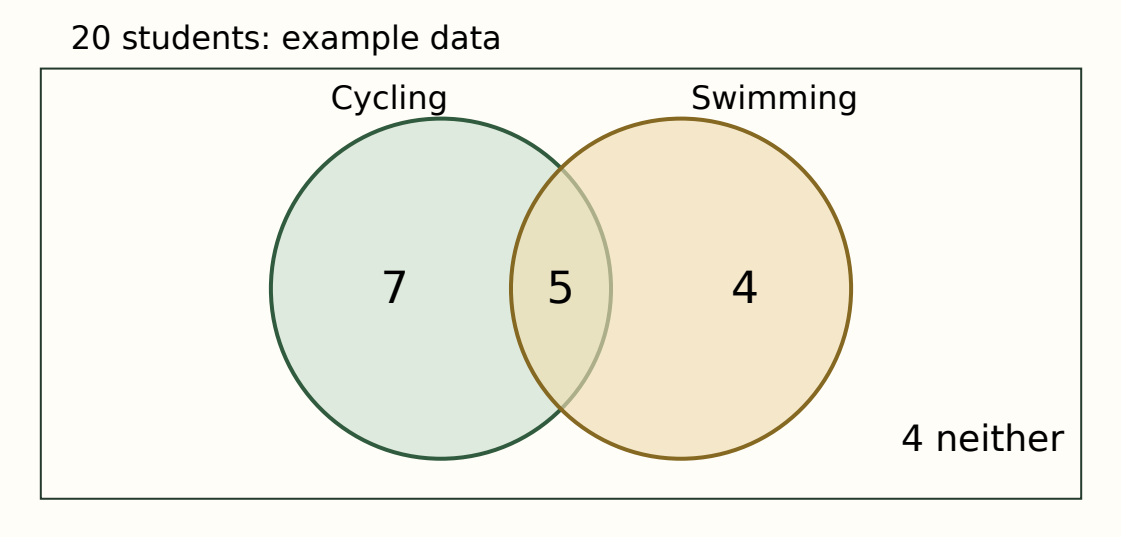
Tables, trees and Venn diagrams

6 questions | 11 marks

Equivalent correct methods earn the corresponding marks.

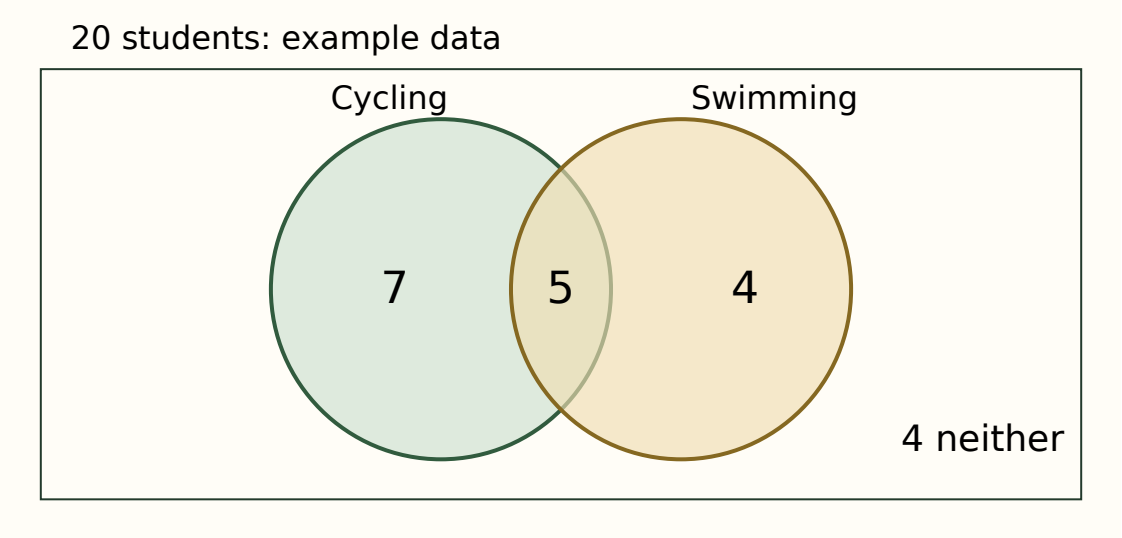
1. How many swim but do not cycle in the diagram? [1 mark]



Read the swimming-only region.

Answer: 4 students.

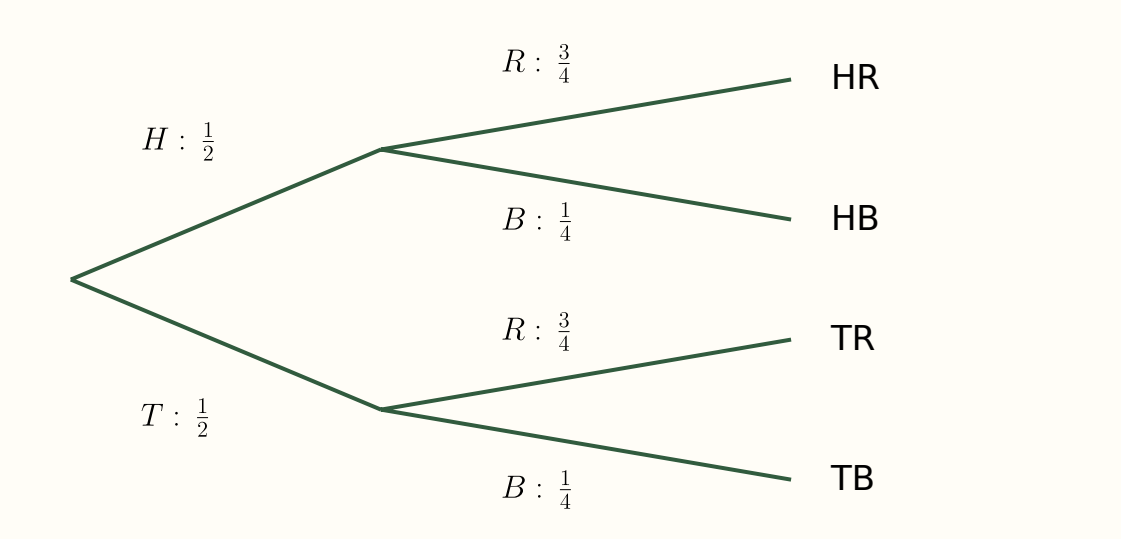
2. Find $P(\text{cycling or swimming})$ in the diagram. [2 marks]



Add $7+5+4$ once each.

Answer: $\frac{16}{20}=\frac{4}{5}$.

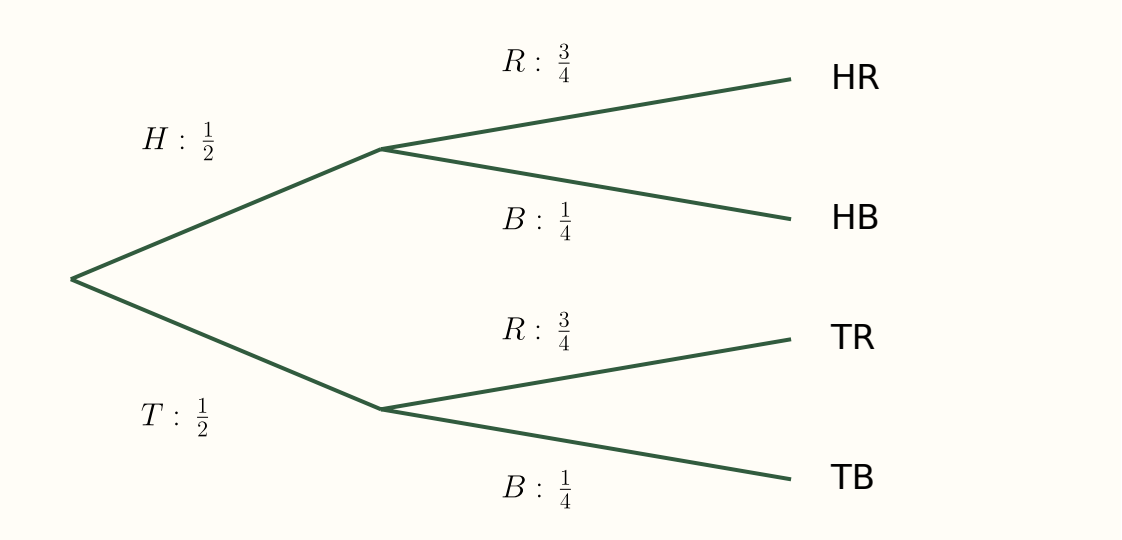
3. List all complete outcomes on the tree. [2 marks]



Each coin result is followed by R or B.

Answer: HR,HB,TR,TB.

4. Using the tree, find $P(\text{HR or TB})$. [3 marks]



$P(\text{HR}) = \frac{3}{8}$; $P(\text{TB}) = \frac{1}{8}$.

Add disjoint outcomes: $\frac{4}{8} = \frac{1}{2}$.

Answer: $\frac{1}{2}$.

5. A two-stage table has 3 rows and 4 columns of outcomes. Count its cells. [1 mark]

$3 \times 4 = 12$.

Answer: 12.

6. A branch point has only two alternatives with probabilities 0.4 and 0.7. Explain the error. [2 marks]

All alternatives leaving one point must sum to 1.

Answer: They total 1.1, not 1.