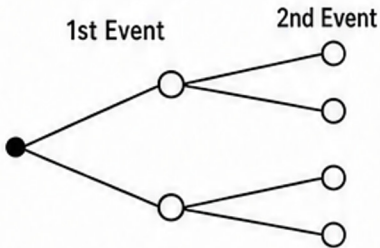


PROBABILITY TREE DIAGRAM TEMPLATE CARDS

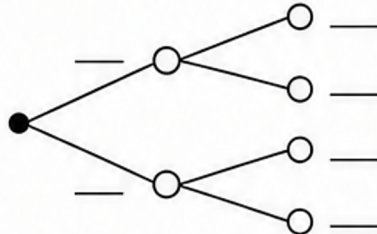
CUT OUT AND USE

TREE DIAGRAM TEMPLATE



Use this template to build your own tree.

FILL THE PROBABILITIES

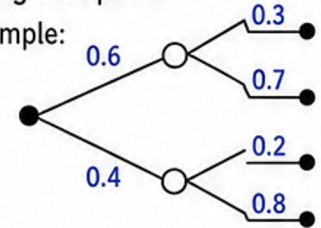


Add probabilities to each branch.

MULTIPLY ALONG A PATH

To find the probability of a path, multiply the probabilities along that path.

Example:



$$P(\text{top, top}) = 0.6 \times 0.3 = 0.18$$

ADD TO CHECK

The probabilities of all outcomes at the same stage must add to 1.

Check:

$$\text{First stage: } \underline{\quad} + \underline{\quad} = 1$$

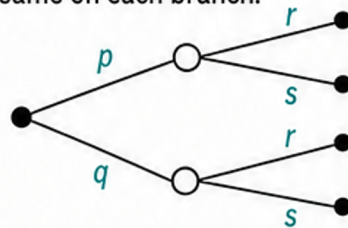
$$\text{Second stage (each branch):}$$

$$\underline{\quad} + \underline{\quad} + \underline{\quad} = 1$$



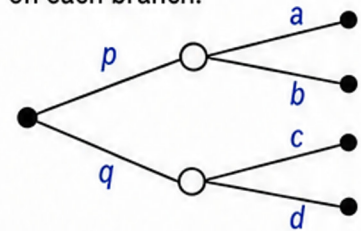
INDEPENDENT EVENTS

If events are independent, the probabilities on the second stage are the same on each branch.



DEPENDENT EVENTS

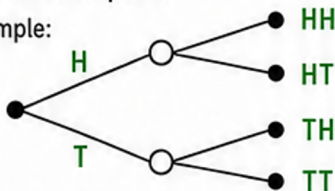
If events are dependent, the probabilities on the second stage change on each branch.



OUTCOMES

List the outcomes at the end of each path.

Example:



Outcomes: HH, HT, TH, TT

PROBABILITY OF AN OUTCOME

Add the probabilities of all paths that give the outcome.

Example:

$$\begin{aligned} P(H) &= P(HH) + P(HT) \\ &= (0.6 \times 0.3) + (0.6 \times 0.7) \\ &= 0.18 + 0.42 \\ &= 0.60 \end{aligned}$$

SAMPLE SPACE

The set of all possible outcomes.

$$S = \{HH, HT, TH, TT\}$$



STARTING POINT

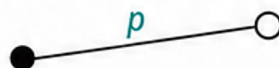
Begin every tree with a single starting point.



This shows that no event has happened yet.

BRANCH

A line showing an outcome. Label it with the probability.



Probability on a branch shows how likely it is.

TERMINAL OUTCOME

An end point of a path.



Each end point represents one possible outcome.