Tools of chance

Mana Maths

Te reo Māori terms

pea
probability
Open in Te Aka

uka
coin
Open in Te Aka

pīrori
dice
Open in Te Aka

purei kāri
playing cards
Open in Te Aka

Foundation

1. List the two possible outcomes when a fair coin is tossed.

2. A fair die is rolled. Write the possible scores.

3. A spinner has red, blue, green, and yellow sectors. List the possible colours.

4. A bag contains only black and white counters. Name the possible colours you could pick.

5. Which is more likely on a fair coin: heads or tails?

6. Which is impossible on a standard die: rolling 4 or rolling 8?

7. Which is certain on a standard die: rolling a number less than 7 or rolling a 9?

8. Write the probability of getting heads on a fair coin as a fraction.

9. Write the probability of rolling a 6 on a fair die as a fraction.

10. Write the probability of rolling an even number on a fair die as a fraction.

11. A spinner has 3 equal sectors labelled A, B, and C. What is the probability of landing on B?

12. A bag has 5 counters: 2 red and 3 blue. What colour is more likely to be picked?

13. Is rolling a 7 on a standard die possible, impossible, or certain?

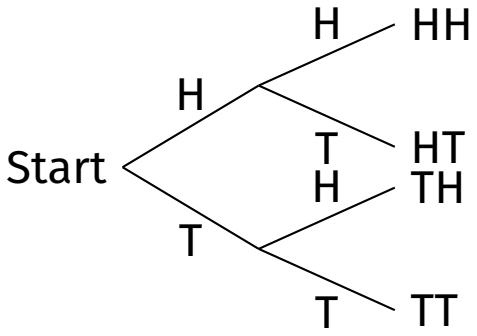
14. Is getting either heads or tails on one coin toss possible, impossible, or certain?

15. Which is more likely on a fair die: rolling an odd number or rolling a 6?

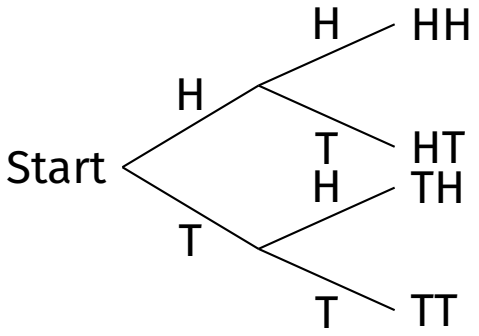
16. Fill in the blank: the sample space for a fair coin is $\{\square, \square\}$.

Proficient

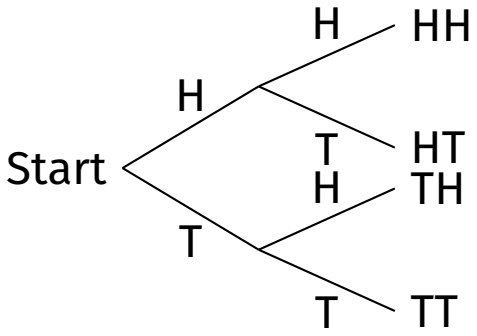
1. Use this tree to list the sample space for tossing two coins.



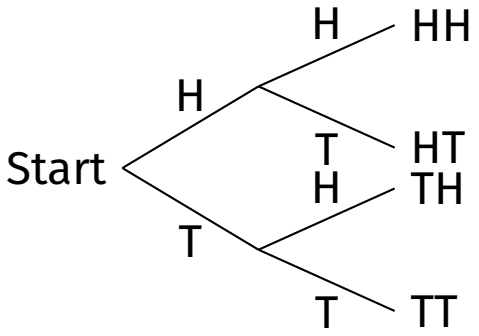
2. Use the tree to say how many outcomes are in the sample space.



3. Use the tree to write the probability of getting exactly one head.



4. Use the tree to write the probability of getting two tails.



5. A fair die is rolled. What is the probability of getting a factor of 6?

6. A fair die is rolled. What is the probability of getting a multiple of 3?

7. A spinner has 5 equal sectors labelled $1, 2, 3, 4, 5$. What is the probability of landing on a prime number?

8. A bag has 8 counters: 3 red, 2 blue, and 3 green. What is the probability of picking a blue counter?

9. A standard deck card is chosen. What is the probability that the card is a heart?

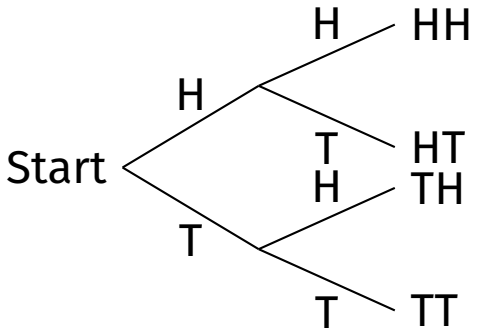
10. A standard deck card is chosen. What is the probability that the card is black?

11. Which is more likely: rolling a number greater than 4 on a die or picking a blue counter from a bag with 1 blue and 3 red counters?

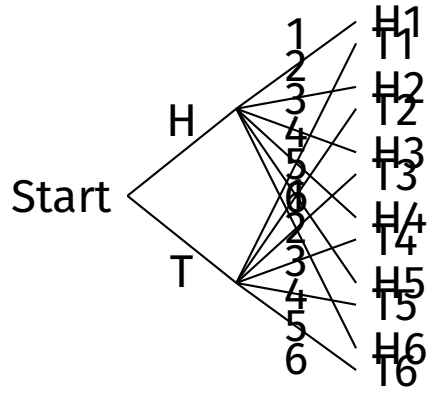
12. Which is more likely: drawing a heart from a deck or getting heads on a fair coin?

Excellence

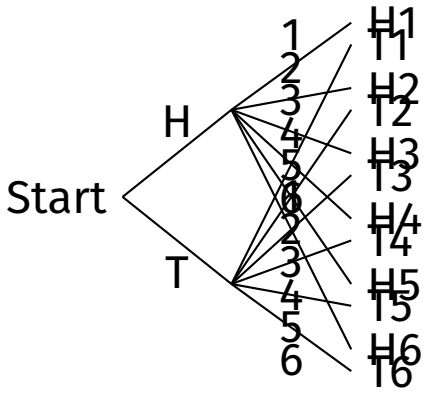
1. Use this tree for two coin tosses. A student says there are only 3 outcomes because the answers are heads, tails, or one of each. Are they correct? Explain.



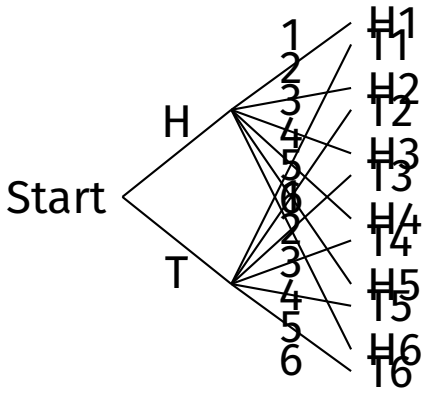
2. Use this tree to list the sample space for tossing a coin and rolling a die.



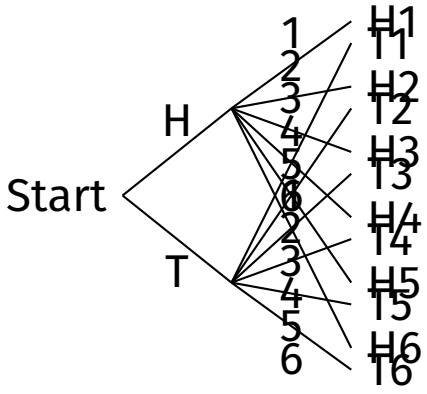
3. Use the tree to say how many outcomes are in the sample space.



4. Use the tree to find the probability of getting heads and a 5.



5. Use the tree to find the probability of getting tails and an even number.



6. A student says the probability of drawing a red card from a standard deck is $\frac{1}{4}$. Are they correct? Explain.

7. A spinner has 8 equal sectors. 3 are red, 3 are blue, and 2 are yellow. What is the probability of not landing on yellow?

8. A bag contains 2 red, 5 blue, and 3 green counters. What is the probability of picking red or green?

9. A standard deck card is chosen. What is the probability of drawing a face card?

10. A standard deck card is chosen. What is the probability of drawing a red king?