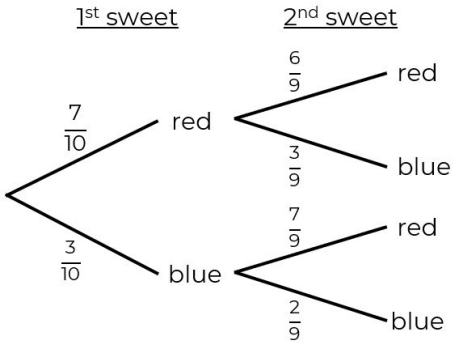
# Calculate probabilities of dependent events

Mr Chan

Maths

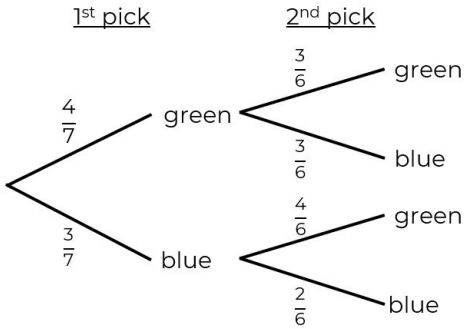
# Calculate probabilities of dependent events

1. Jack takes two sweets from his bag. Here is a probability tree with all outcomes shown.




Calculate the probability that Jack takes two red sweets from his bag.

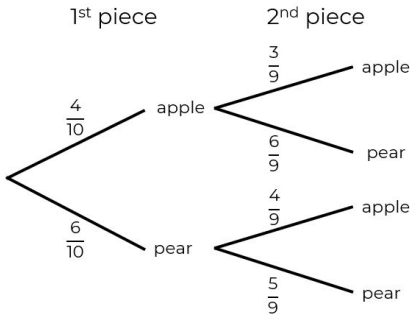
2. Amir is takes 2 counters from a bag. Here is a probability tree with all outcomes shown.




Calculate the probability that Amir takes two counters that are different colours.

# Calculate probabilities of dependent events

3. Rosie is eating fruit from her lunch bag. The outcomes for her first two pieces of fruit are shown:




Calculate the probability that Rosie eats at least one piece of apple.

4. Jim is giving away some marbles he has in a box.
The table shows the probabilities of taking different coloured marbles.

| Blue | Green |
|---|---|
| 0.2 | 0.8 |

Jim has 24 blue marbles.

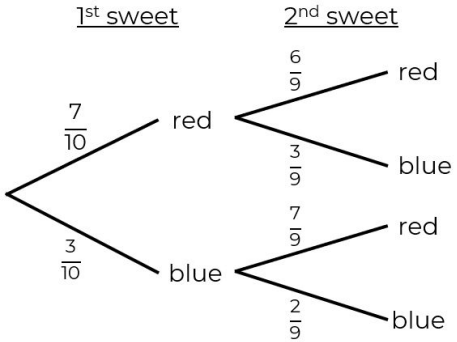
a) Calculate how many green marbles there are.

b) Calculate the probability that Jim gives away two blue marbles.

# Answers

# Calculate probabilities of dependent events

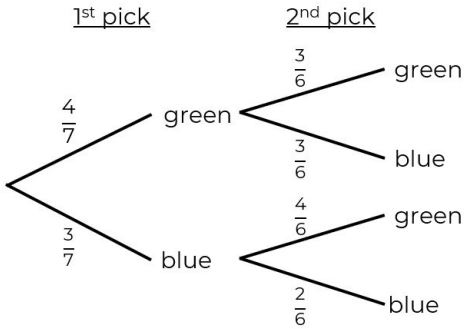
1. Jack takes two sweets from his bag. Here is a probability tree with all outcomes shown.




Calculate the probability that Jack takes two red sweets from his bag.

$$\frac{42}{90} = \frac{7}{15}$$

2. Amir is takes 2 counters from a bag. Here is a probability tree with all outcomes shown.

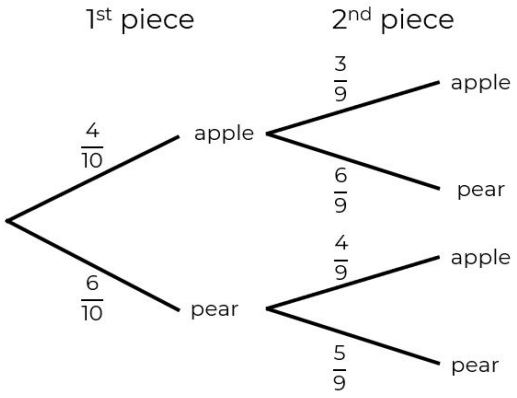



Calculate the probability that Amir takes two counters that are different colours.

$$\frac{24}{42} = \frac{4}{7}$$

# Calculate probabilities of dependent events

3. Rosie is eating fruit from her lunch bag. The outcomes for her first two pieces of fruit are shown:




$\frac{60}{90} = \frac{2}{3}$

Calculate the probability that Rosie eats at least one piece of apple.

4. Jim is giving away some marbles he has in a box.

The table shows the probabilities of taking different coloured marbles.

| Blue | Green |
|---|---|
| 0.2 | 0.8 |

Jim has 24 blue marbles.

a) Calculate how many green marbles there are. 96

b) Calculate the probability that Jim gives away two blue marbles. $\frac{23}{595}$