

# Securing grade 5 – Probability – From tables

When a drawing pin is dropped it can land point down or point up.

Lucy, Mel and Tom each dropped the drawing pin a number of times.

The table shows the number of times the drawing pin landed point down and the number of times the drawing pin landed point up for each person.

	Lucy	Mel	Tom
point down	31	53	16
point up	14	27	9

Stuart is going to drop the drawing pin twice.

Use all the results in the table to work out an estimate for the probability that the drawing pin will land point up the first time and point down the second time.

The table shows the probabilities that a biased dice will land on 2, on 3, on 4, on 5 and on 6.

Number on dice	1	2	3	4	5	6
Probability		0.17	0.18	0.09	0.15	0.1

Neymar rolls the biased dice 200 times.

Work out an estimate for the total number of times the dice will land on 1 or on 3.

148 students each choose to study Geography or to study History.

72 of the students choose History.  
34 boys choose Geography.  
28 girls choose History.

Draw a two way table to represent this information.

A boy is chosen. What is the probability that the boy did History?

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$$\frac{2}{9}$$

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Probability		0.17	0.18	0.09	0.15	0.1

Neymar rolls the biased dice 200 times.

Work out an estimate for the total number of times the dice will land on 1 or on 3.

$$62$$

148 students each choose to study Geography or to study History.

72 of the students choose History.

34 boys choose Geography.

28 girls choose History.

Draw a two way table to represent this information.

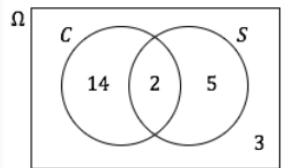
	Geog	His	Total
Boy	34	44	78
Girl	42	28	70
Total	76	72	148

A boy is chosen. What is the probability that the boy did History?

$$\frac{44}{78}$$

# Securing grade 5 – Probability – From diagrams

The Venn diagram below shows the numbers of students in a class who had curry (C) and salad (S) at lunch.



A student is chosen at random.

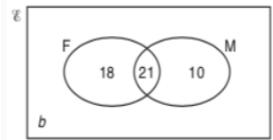
Find  $P(S)$

Find  $P(C')$

Find  $P(C \cap S)$

Find  $P(C \cup S)$

The Venn diagram shows the number of students who passed their examination in French (F) and those who passed their examination in Mathematics (M). The number of students who did not pass either examination is  $b$ .



One of the 55 students is selected at random.

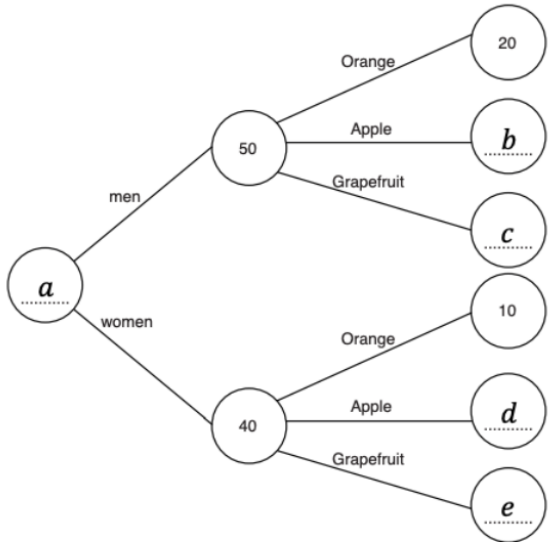
What is the probability that this student passed exactly one of these two subjects?

A hotel manager asked some people to choose their favourite breakfast fruit juice.

They each chose one from Orange, Apple or Grapefruit.

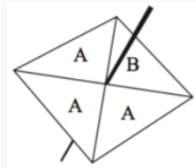
- 20 men chose Orange
- Equal numbers of men chose Apple and Grapefruit.
- 10 women chose Orange
- Twice as many women chose Apple as Grapefruit.

Use this information to complete the frequency tree.



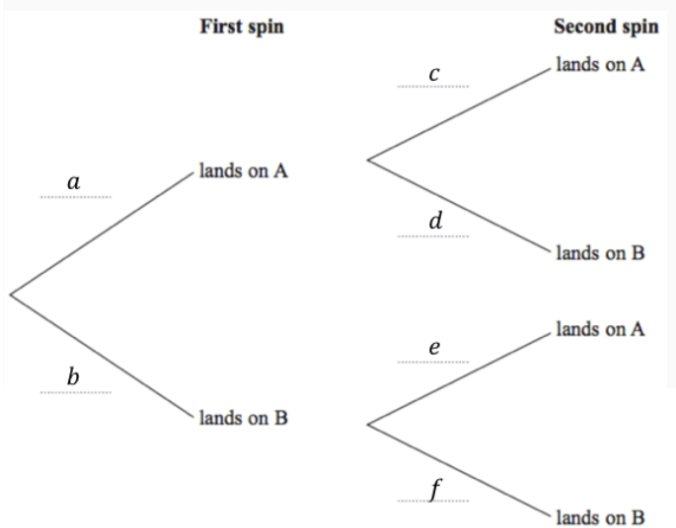
What is the probability that a man who has an apple is chosen?

The diagram shows a fair 4-sided spinner.



Hasmeet is going to spin the spinner twice. Complete the probability tree diagram.

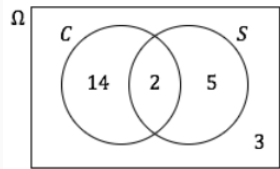
a) Complete the tree diagram



b) What is the probability that the spinner lands on A both times?

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The Venn diagram below shows the numbers of students in a class who had curry (C) and salad (S) at lunch.



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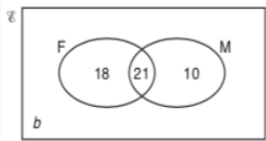
Find  $P(S) = \frac{7}{24}$

Find  $P(C')$   $\frac{8}{24}$

Find  $P(C \cap S) = \frac{2}{24}$

Find  $P(C \cup S) = \frac{21}{24}$

The Venn diagram shows the number of students who passed their examination in French (F) and those who passed their examination in Mathematics (M). The number of students who did not pass either examination is  $b$ .



One of the 55 students is selected at random.

What is the probability that this student passed exactly one of these two subjects?

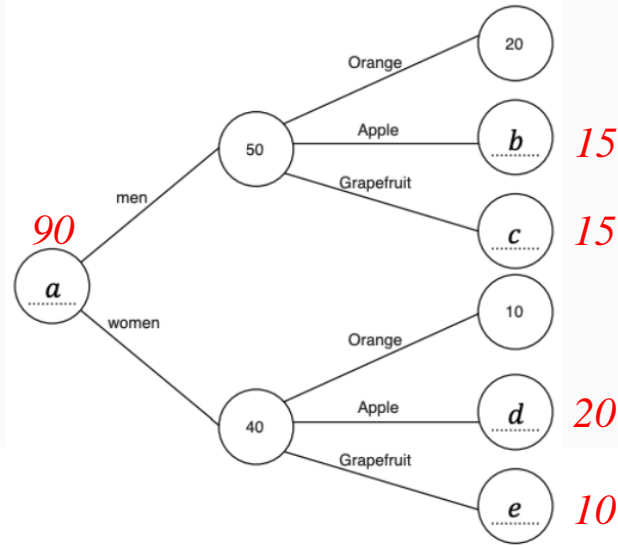
$\frac{28}{55}$

A hotel manager asked some people to choose their favourite breakfast fruit juice.

They each chose one from Orange, Apple or Grapefruit.

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- 10 women chose Orange
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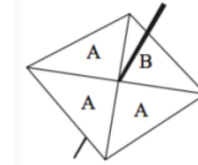
Use this information to complete the frequency tree.



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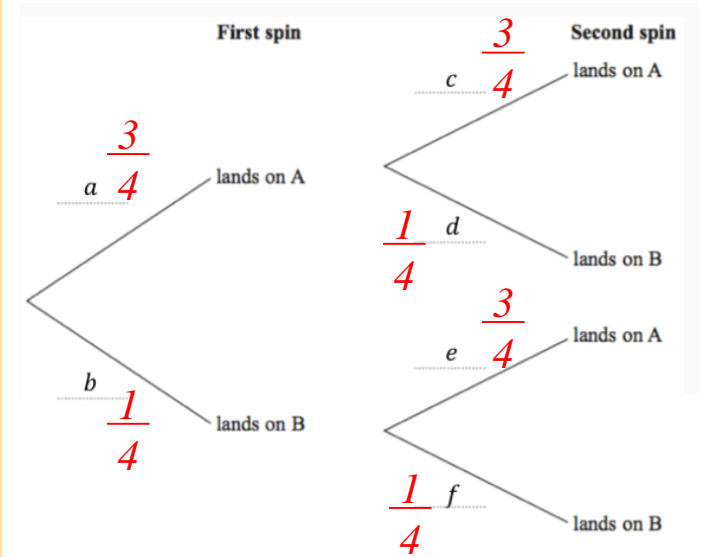
$\frac{15}{90}$

The diagram shows a fair 4-sided spinner.



Hasmeet is going to spin the spinner twice. Complete the probability tree diagram.

a) Complete the tree diagram



b) What is the probability that the spinner lands on A both times?

$\frac{3}{4} \times \frac{3}{4} = \frac{9}{16}$