# 4.2 Probability Diagrams – Tree & Venn Diagrams

## Question Paper

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|---|---|
| Course | CIE IGCSE Maths |
| Section | 4. Probability & Statistics |
| Topic | 4.2 Probability Diagrams - Tree & Venn Diagrams |
| Difficulty | Hard |

**Time allowed:** 40

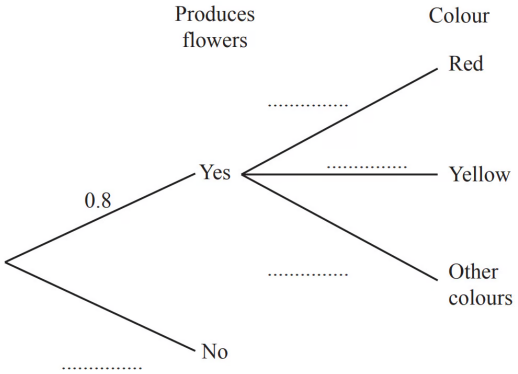
**Score:** /29

**Percentage:** /100

## Question 1a

Tanya plants some seeds.
The probability that a seed will produce flowers is 0.8.
When a seed produces flowers, the probability that the flowers are red is 0.6 and the probability that the flowers are yellow is 0.3.

Complete the tree diagram.




[2]

**[2 marks]**

## Question 1b

Find the probability that a seed chosen at random produces red flowers.

[2]

**[2 marks]**

## Question 1c

Tanya chooses a seed at random.

Find the probability that this seed does not produce red flowers and does not produce yellow flowers.

[3]

**[3 marks]**

## Question 1d

Two of the seeds are chosen at random.

Find the probability that one produces flowers and one does not produce flowers.

[3]

**[3 marks]**

## Question 2a

On any Saturday, the probability that Bob plays football is $\frac{2}{5}$.

Calculate the probability that Bob plays football for 2 of the next 3 Saturdays.

[3]

**[3 marks]**

## Question 2b

On any Saturday, the probability that Arun plays football is $\frac{3}{4}$.

When Arun plays football, the probability that he scores the winning goal is $\frac{1}{7}$.

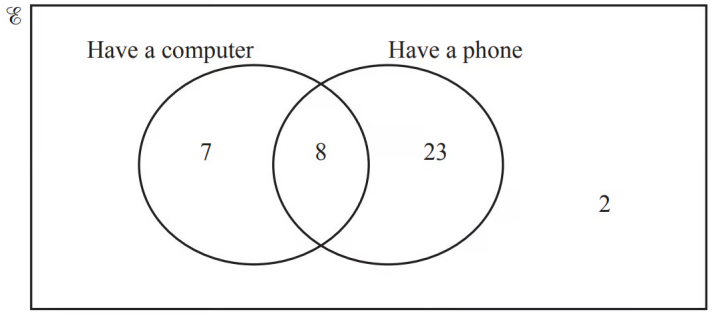
Calculate the probability that Arun scores the winning goal one Saturday.

[2]

**[2 marks]**

## Question 3a

40 children were asked if they have a computer or a phone or both.
The Venn diagram shows the results.




A child is chosen at random from the children who have a computer.

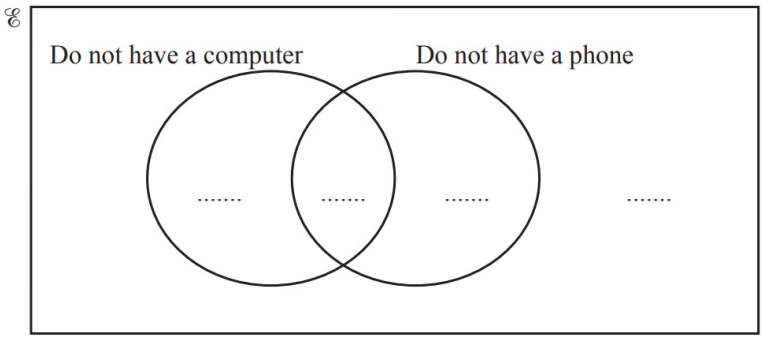
Write down the probability that this child also has a phone.

[1]

**[1 mark]**

## Question 3b

Complete the Venn diagram.

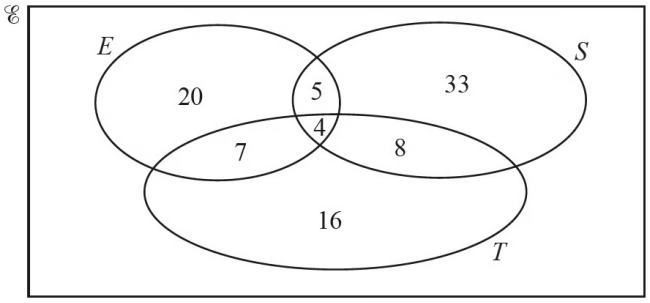



[2]

**[2 marks]**

## Question 4

On another day, the number of members using the exercise machines ($E$), the swimming pool ($S$) and the tennis courts ($T$) is shown on the Venn diagram.




A member using the swimming pool is chosen at random.

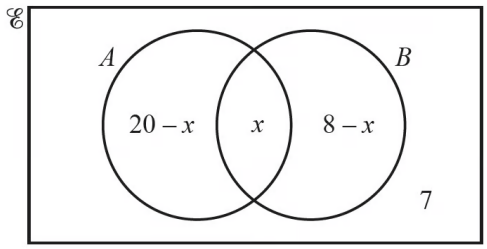
Find the probability that this member also uses the tennis courts and the exercise machines.

[2]

**[2 marks]**

## Question 5a

The Venn diagram shows information about the number of elements in sets $A$, $B$ and $\mathscr{E}$.




$n(A \cup B) = 23$

Find the value of $x$.

$x =$ ..... [3]

**[3 marks]**

## Question 5b

An element is chosen at random from $\mathscr{E}$.

Find the probability that this element is in $(A \cup B)'$.

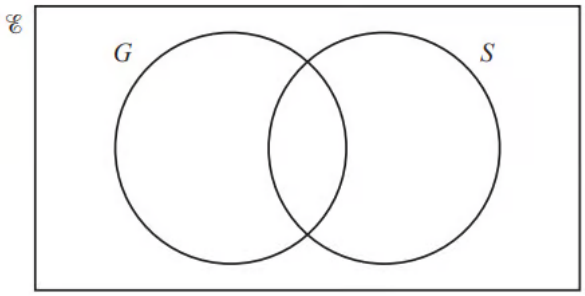
[2]

**[2 marks]**

## Question 6a

There are 32 students in a class.

5 do not study any languages.
15 study German (G).
18 study Spanish (S).




Complete the Venn diagram to show this information.

[2]

**[2 marks]**

## Question 6b

A student is chosen at random.

Find the probability that the student studies Spanish but not German.

[1]

**[1 mark]**

## Question 6c

A student who studies German is chosen at random.

Find the probability that this student also studies Spanish.

[1]

**[1 mark]**