

Probability – GCSE Mathematics Paper 1

1. No.5

After school, Priya will

- go running (R)
- do her homework (H)
- play a video game (V).

Complete the list of the 6 possible orders in which she could do them.

[2 marks]

RHV

2. No.15

In a bag there are only red discs, blue discs and green discs.

There are 10 red discs.

When one disc is picked at random

$$P(\text{red}) = \frac{1}{8}$$

$$P(\text{blue}) = \frac{2}{5}$$

How many **green** discs are in the bag?

[4 marks]

Answer _____

3. No.20

In a group of 98 students

25 study both Art and French

10 study Art but do not study French

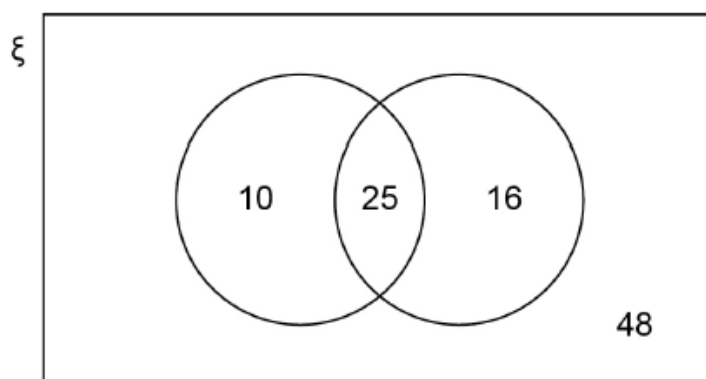
41 study French.

Joel draws this Venn diagram to represent the information.

ξ = the group of 98 students

A = the students who study Art

F = the students who study French



Make **two** criticisms of his diagram.

[2 marks]

Criticism 1 _____

Criticism 2 _____

4. No.7

In a group of 98 students

25 study both Art and French

10 study Art but do not study French

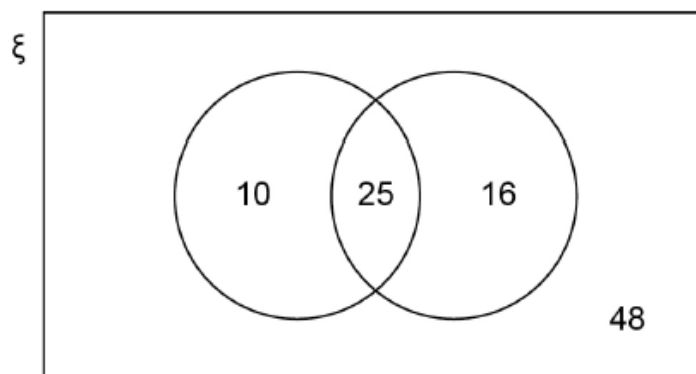
41 study French.

Joel draws this Venn diagram to represent the information.

ξ = the group of 98 students

A = the students who study Art

F = the students who study French



Make **two** criticisms of his diagram.

[2 marks]

Criticism 1 _____

Criticism 2 _____

5. No.12

In a game, two bags, A and B, contain cards.

Each card is marked Yes or No.

The table shows the number of each type of card in the bags.

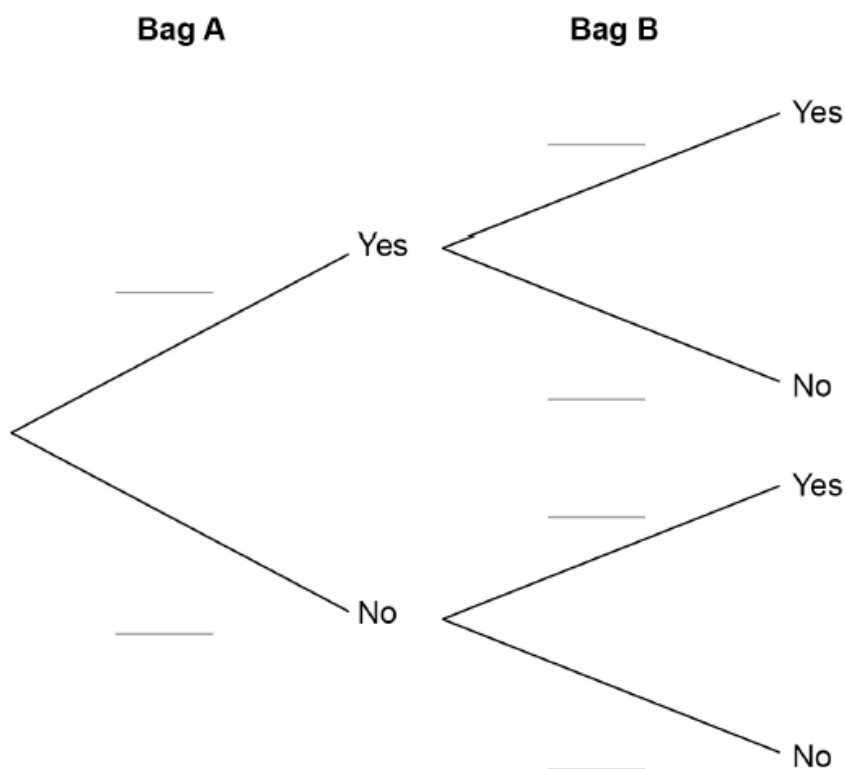
	Yes	No
Bag A	3	2
Bag B	1	9

In the game, a player picks one card at random from each bag.

The cards are then put back into the bags.

(a) Complete the tree diagram.

[2 marks]



- (b) To win a prize, a player must pick two cards marked Yes.
450 people each play the game once.

How many people are expected to win a prize?

[3 marks]

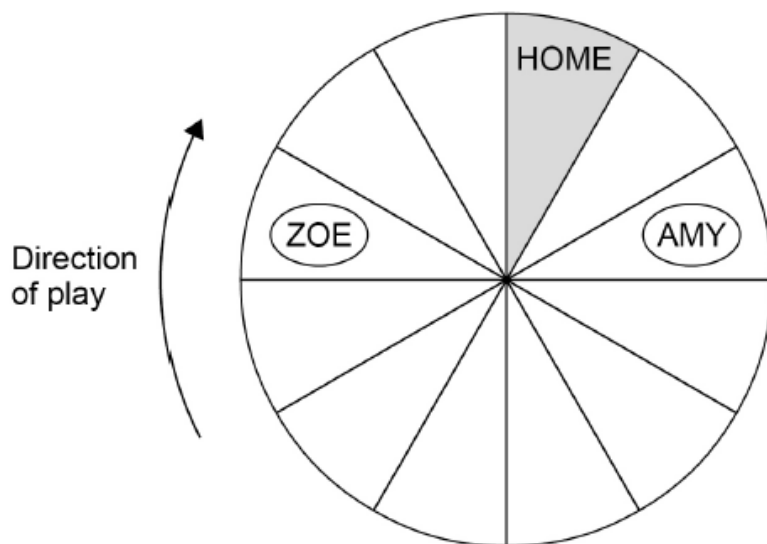
Answer _____

6. No.26

Zoe and Amy are playing a board game.

- They each have one disc and take turns to roll a fair, ordinary dice.
- The player moves their disc **clockwise** the number of spaces shown on the dice.
- The winner is the first player whose disc is on HOME at the end of a turn.

Here is the board after Amy's turn.



Work out the probability that Zoe wins within her next two turns.

[4 marks]

7. No.14

Counters in a bag are red, white or blue.

A counter is picked at random.

Complete the table.

[2 marks]

	Red	White	Blue
Probability	0.15	0.4	

8. No.19

Items made at a factory have to pass two checks.

90% pass the first check.

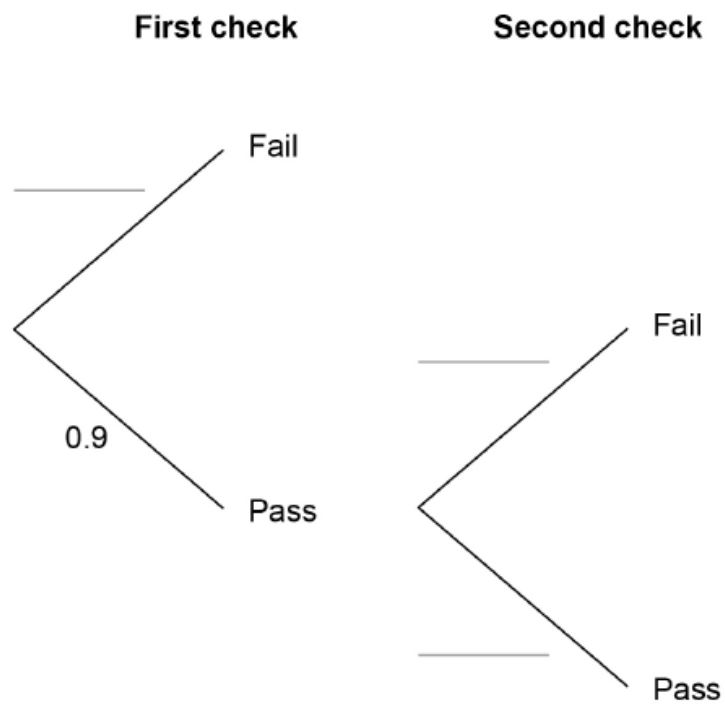
The items that fail are scrapped.

99% of the items that pass the first check pass the second check.

The items that fail are scrapped.

(a) Complete the tree diagram.

[2 marks]



- (b) An item is chosen at random before the checks.

Work out the probability that the item is scrapped.

[3 marks]

Answer _____