Q1. In a game, players roll two ordinary, fair six-sided dice.
The numbers rolled are added to get a score.

(a) Complete the table of possible scores.

		Dice 2					
	+	**1**	**2**	**3**	**4**	**5**	**6**
	1	2	3	4	5	6	7
	2	3	4	5	6	7	8
Dice 1	**3**	4	5	6	7	8	
	4	5	6	7	8		
	5	6	7	8			
	6	7	8				

(1)

(b) What is the most likely score?

Answer .....

(1)

(c) To win a prize a player must score 8.

Work out the probability of winning a prize.

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Answer .....

(2)
(Total 4 marks)

Q2. John goes to work by car or by train.

(a) The probability that John goes by car is 0.4

Work out the probability he goes by train.

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Answer .....

(1)

(b) John works for 200 days each year.

How many days would you expect him to go to work by car?

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Answer .....

(2)

(c) Ben also goes to work by car or by train.
Out of 200 days, he went by car on 150 days.

Work out the relative frequency that Ben goes to work by car.

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Answer .....

(1)
(Total 4 marks)

Q3.50 cars arrive at a car park.
The table shows the number of people in each car.

Number of people	Number of cars
1	9
2	12
3	18

4	7
5	4

(a) One of the cars is chosen at random.

Work out the probability that there are **more than 3** people in the car.

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Answer .....

(2)

(b) Work out the total number of people in the 50 cars.

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Answer .....

(2)
(Total 4 marks)

Q4.

There are 30 passengers on a bus.
13 of them are **male**.

At the next stop 8 people get off the bus and nobody gets on.

The probability that a passenger, picked at random, is **male** is now $\frac{1}{2}$

How many of the people who got off the bus were **female**?

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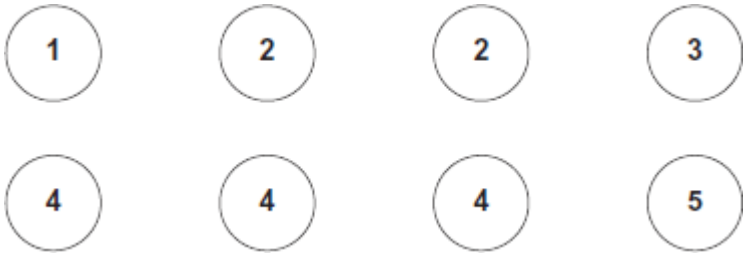
Answer .....

(Total 3 marks)

Q5.

Two bags, A and B, contain numbered counters.

(a) Here are the 8 counters in bag A.



A counter is chosen at random from bag A.

Write down the probability that the number on the counter is 4

Answer .....

(1)

(b) A counter is chosen at random from bag B.

The table gives the probabilities of the numbers on the counters in bag B.

Number on counter	6	7	8	9
Probability	0.2	0.1	0.4	0.3

Which bag has the greater probability of choosing an **even** number?
You **must** show your working.

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Answer .....

(2)
(Total 3 marks)

Q6. There are 10 balls in a bag.
They are red or blue or yellow.

There are twice as many blue balls as red balls.
There are more red balls than yellow balls.

A ball is taken at random from the bag.

Fill in the table to show the **probability** of taking each colour.

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Colour	Red	Blue	Yellow
Probability			

(Total 3 marks)

Q7.(a) A bag contains 20 counters.
8 of the counters are yellow.

A counter is picked at random.

What is the probability that it is yellow?
Give your answer as a fraction in its simplest form.

Answer .....

(2)

(b) A different bag contains only black and white counters.
The probability that a counter is black is 0.14

A counter is picked at random.

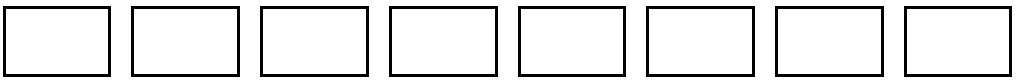
What is the probability that it is white?

Answer .....

(2)
(Total 4 marks)

Q8. Put the numbers 1, 2 or 3 on each card so that when a card is picked at random

- the probability of picking a 2 is greater than $\frac{1}{2}$
- the probability of picking a 1 is twice the probability of picking a 3.



(Total 2 marks)

Q9.

Sweets come in four flavours.

Flavour	Lime	Orange	Melon	Cherry
Probability	0.2	0.15	0.3	

(a) What is the probability that a sweet is **cherry** flavour?

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Answer .....

(2)

(b) What is the probability that a sweet is **lime** or **melon** flavour?

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Answer .....

(1)

(c) There are 200 sweets altogether.

How many are **orange** flavour?

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Answer .....

(2)

(Total 5 marks)

Q10.

There are 30 students in a class.
A student is chosen at random.

(a) Is the probability that a boy is chosen equal to the probability that a girl is chosen?

Tick a box.
Give a reason for your answer.

Yes ☐ No ☐ Cannot say ☐

Reason .....

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(1)

(b) 7 of the 30 students have blue eyes.

What is the probability that the student chosen has blue eyes?

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Answer .....

(1)
(Total 2 marks)

Q11.

Here are two sets of cards.

One card is chosen at random from each set.
The numbers on the cards are added to give a score.

(a) Complete the table to show the possible scores.

		Set A			
	+	1	3	5	7
Set B	0	1	3		
	2	3			
	4				
	6				

(2)

(b) What is the probability that the score is even?

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Answer .....

(1)

(c) What is the probability that the score is **not** a square number?

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Answer .....

(2)
(Total 5 marks)

Q12. A bag contains only red counters and blue counters.
There are 6 **more** red than blue.

A counter is chosen at random from the bag.

The probability it is blue is $\frac{1}{4}$

How many **red** counters are in the bag?

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Answer .....

(Total 3 marks)

Q13. Janet and Robin buy raffle tickets.
The prize is £ 120.

Janet buys 5 tickets.

Robin buys 1 ticket.

(a) Who has the better chance of winning?
Give a reason for your answer.

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(1)

(b) In total, 300 tickets were sold.

What is the probability that Janet wins?
Give your answer as a fraction in its simplest form.

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Answer .....

(2)

(c) Janet wins the prize of £ 120.
She shares it with Robin in the ratio 5 : 1

Robin gets the smaller share.

How much does he get?

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Answer £ .....

(2)
(Total 5 marks)

Q14. 150 boys and 160 girls sit an examination.
The table shows some of the probabilities that they came with or without a calculator.

	With calculator	**Without calculator**
Boy	0.92	0.08
Girl	0.95	

(a) What is the probability that a girl came **without** a calculator?
Write your answer in the table.

(1)

(b) How many of the 150 boys came **with** a calculator?

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Answer .....

(2)
(Total 3 marks)

Q15.

200 raffle tickets are sold.
The tickets are numbered 1 to 200.
There is one prize.

(a) Harry has one ticket.

What is the probability that he wins?

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Answer .....

(1)

(b) Kate has ticket numbers 51 to 70.

What is the probability that she wins?

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Answer .....

(2)

(Total 3 marks)

Q16.

A bag contains only red balls and blue balls.
The probability of choosing a **red** ball is 0.4

(a) What is the probability of choosing a **blue** ball?

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Answer .....

(1)

(b) What is the least number of balls that could be in the bag?

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Answer .....

(1)

(c) The number of red balls in the bag is doubled.
The number of blue balls in the bag is also doubled.

What is the probability of choosing a **red** ball now?

Answer .....

(1)

(Total 3 marks)

Q17.

The four possible outcomes of a trial are A, B, C and D.

	A	B	C	D
Probability	0.3	0.25	0.1	

(a) What is the probability that the outcome of the trial is D?

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Answer .....

(2)

(b) What is the probability that the outcome of the trial is A **or** C?

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Answer .....

(1)

(Total 3 marks)