(b) Will plays a game at the theme park.
There are 20 cards numbered from 1 to 20.
Will takes a card at random.
He wins if the card he chooses shows a prime number.

Work out the probability that Will wins.
Give your answer as a fraction in its simplest form.

(b) ..... **[4]**

7 Bill owns four cars. Each car is a different colour.
Each day, he drives to work in one of his cars.
The table shows the probability that Bill chooses a car of a particular colour.

Car	red	blue	yellow	white
Probability	0.4	0.17	0.05	

Work out the probability that Bill chooses the white car.

..... **[2]**

6 **(a)** Henry puts eight counters into a bag.
Each counter has a different whole number on it between 1 and 8.
He picks a counter at random from the bag and the number is noted.

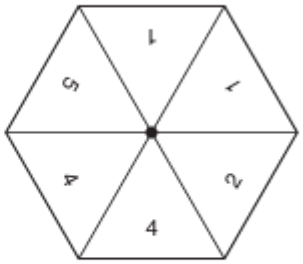
Choose from the words in the box to complete each sentence.

likely	impossible	certain	evens	unlikely

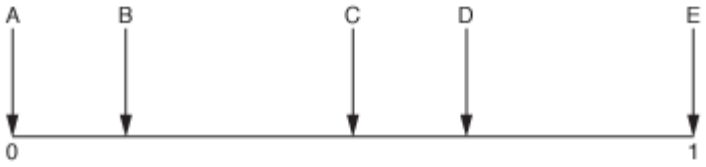
(i) It is ..... that he picks a number less than 9. **[1]**

(ii) It is ..... that he picks an odd number. **[1]**

1 A fair spinner has six sides.
They are labelled 1, 1, 2, 4, 4, 5.



The diagram shows a probability scale.



Which arrow shows the probability of

(a) scoring a 2,

(a) .....**[1]**

(b) scoring a number less than 6,

(b) .....**[1]**

(c) scoring a 1 or a 4?

(c) .....**[1]**

9 Three friends, Ann (A), Bob (B) and Carol (C), go on holiday together.

(a) They book a row of three seats on the plane.
When they arrive at the plane they sit in a random order.

(i) List all the different orders they could sit on the three seats.
The first one has been done for you.

Seat 1	Seat 2	Seat 3
A	B	C

[2]

(ii) What is the probability that Ann and Carol sit next to each other?

(a)(ii) ..... **[1]**

(iii) What is the probability that Bob sits in seat 1 with Ann next to him?

(iii) ..... **[1]**

8 Hannah wants to display all the possible outcomes when rolling two fair 6-sided dice.

(a) Give a reason why a tree diagram is not the best method to use.

.....[1]

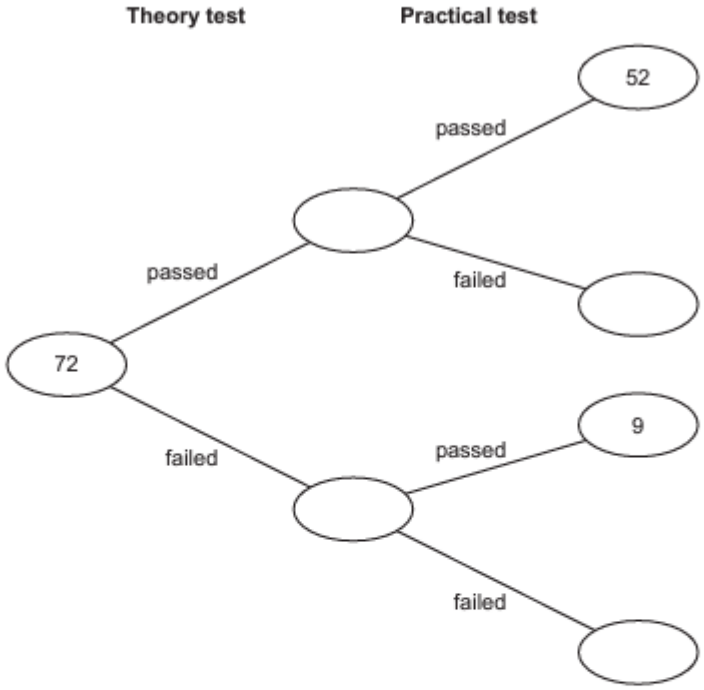
(b) (i) Draw a sample space to display all the possible outcomes. **[2]**

(ii) Show that the probability of the scores on the two dice adding to 11 is $\frac{1}{18}$.

.....[2]

8 72 students each took a theory test followed by a practical test.
They either passed or failed each test.

This frequency tree shows some of the results.



(a) How many students passed both tests?

(a) ..... **[1]**

(b) $\frac{5}{6}$ of the 72 students passed the theory test.

Complete the frequency tree. **[4]**

(c) Which test was passed by more students?
Explain your reasoning.

..... because .....

.....

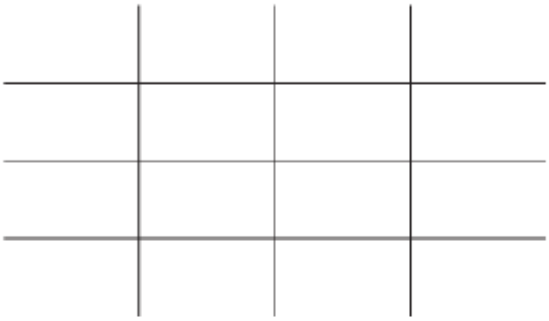
..... **[3]**

6 120 students in Year 10 and Year 11 sit a test.

- 61 of the students are in Year 10.
- 83 of the students are right-handed.
- 20 of the students in Year 11 are left-handed.

One of the students in Year 10 and one of the students in Year 11 are chosen at random.

Which one is more likely to be left-handed?
Show your working. You may use the table if you wish.



..... **[6]**

5 Ling throws a six-sided dice 300 times.
The table shows the frequencies of their results.

(a) Complete the table to show the relative frequencies.

Number on dice	1	2	3	4	5	6
Frequency	42	27	57	60	39	75
Relative frequency			0.19			

[2]

(b) Ling thinks that the dice may be biased.

(i) Explain why evidence from the table could support their opinion.

.....

.....

..... **[1]**

(ii) Explain why the dice may, in fact, **not** be biased.

.....

.....

..... **[1]**

7 The probability that any postcard posted in Portugal on Monday is delivered to the UK within a week is 0.62.
The probability that any postcard posted in Portugal on Friday is delivered to the UK within a week is 0.41.

(a) Anna is on holiday in Portugal.
She posts 15 postcards to the UK on Monday.

How many of her postcards can she expect to be delivered within a week?

(a) ..... **[2]**