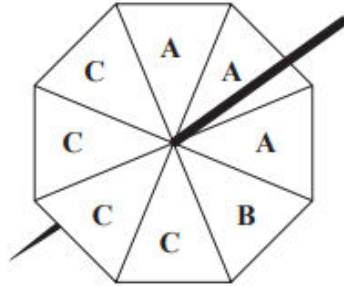


PROBABILITY

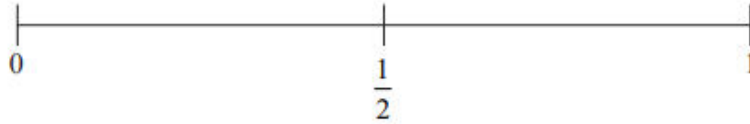
Pearson Edexcel - Tuesday 19 May 2020 - Paper 1 (Non-Calculator) Foundation Tier

1.

6 Gita spins a fair 8-sided spinner.

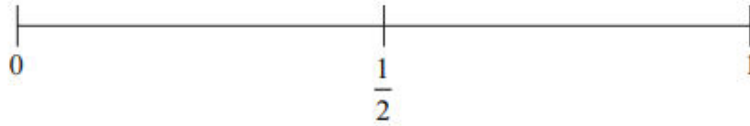


(a) On the probability scale, mark with a cross (×) the probability that the spinner will land on **C**.



(1)

(b) On the probability scale, mark with a cross (×) the probability that the spinner will land on **D**.



(1)

(Total for Question 6 is 2 marks)

2.

16 There are only 5 blue cards, 2 green cards and 4 red cards in a pack.

Isabella is going to take at random one card from the pack.

(a) Write down the probability that Isabella will take a blue card.

.....
(2)

Ken is going to throw a biased dice once.

The probability that the dice will land on six is 0.3

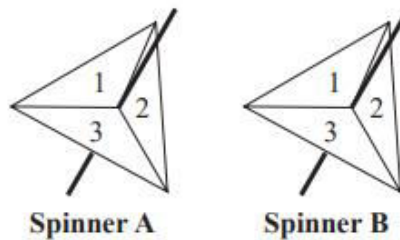
(b) What is the probability that the dice will **not** land on six?

.....
(1)

.....
(Total for Question 16 is 3 marks)

3.

27 Amanda has two fair 3-sided spinners.



Amanda spins each spinner once.

4.

17 Stuart throws a biased coin 10 times.
He gets 7 Tails.

Maxine throws the same coin 50 times.
She gets 30 Tails.

Prasha is going to throw the coin once.

- (i) Whose results will give the better estimate for the probability that she will get Tails, Stuart's or Maxine's?
You must give a reason for your answer.

.....

.....

.....

(1)

- (ii) Use Stuart's and Maxine's results to work out an estimate for the probability that Prasha will get Tails.

.....

(1)

(Total for Question 17 is 2 marks)

Pearson Edexcel - Thursday 8 November 2018 - Paper 2 (Calculator) Foundation Tier

5.

12 There are 49 counters in a bag.

20 of the counters are red.

The rest of the counters are blue.

One of the counters is taken at random.

Find the probability that the counter is blue.

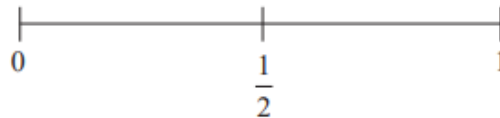
(Total for Question 12 is 2 marks)

Pearson Edexcel - Monday 12 November 2018 - Paper 3 (Calculator) Foundation Tier

6.

6 An ordinary fair dice is thrown once.

(a) On the probability scale below, mark with a cross (×) the probability that the dice lands on an odd number.



(1)

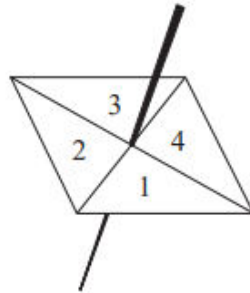
(b) Write down the probability that the dice lands on a number greater than 4

(1)

(Total for Question 6 is 2 marks)

7.

14 Here is a 4-sided spinner.



The table shows the probabilities that when the spinner is spun it will land on 1, on 3 and on 4

Number	1	2	3	4
Probability	0.2		0.4	0.1

The spinner is spun once.

(a) Work out the probability that the spinner will land on 2

.....
(1)

(b) Which number is the spinner least likely to land on?

.....
(1)

Jake is going to spin the spinner 60 times.

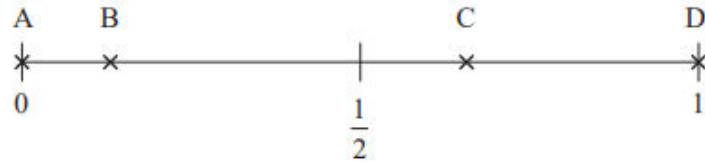
(c) Work out an estimate for the number of times the spinner will land on 1

.....
(2)

(Total for Question 14 is 4 marks)

8.

- 7 Here is a probability scale.
It shows the probability of each of the events A, B, C and D.



- (a) Write down the letter of the event that is certain.

.....
(1)

- (b) Write down the letter of the event that is unlikely.

.....
(1)

There are 12 counters in a bag.

- 3 of the counters are red.
- 1 of the counters is blue.
- 2 of the counters are yellow.
- The rest of the counters are green.

Caitlin takes at random a counter from the bag.

- (c) Show that the probability that this counter is yellow or green is $\frac{2}{3}$

(3)

(Total for Question 7 is 5 marks)

9.

- 13** A scout group has a raffle to raise money for charity.
There is 1 prize to be won in the raffle.

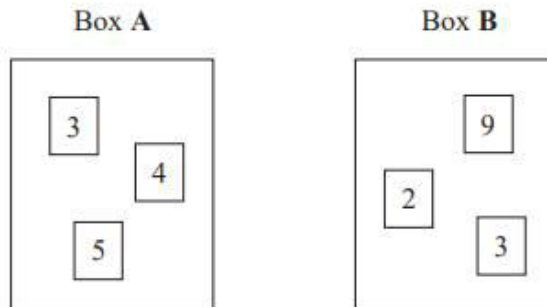
Laura buys 12 raffle tickets.
A total of 350 raffle tickets are sold.

Find the probability that Laura does **not** win the prize.

(Total for Question 13 is 2 marks)

10.

- 17** There are 3 cards in Box A and 3 cards in Box B.
There is a number on each card.



Ryan takes at random a card from Box A and a card from Box B.
He adds together the numbers on the two cards to get a total score.

Work out the probability that the total score is an odd number.

.....
(Total for Question 17 is 2 marks)

Pearson Edexcel – Specimen 2 - Paper 1 (Non-Calculator) Foundation Tier

11.

7 In a box there are three types of chocolates.

There are 6 plain chocolates,
8 milk chocolates
and 10 white chocolates.

Ben takes at random a chocolate from the box.

(a) Write down the probability that Ben takes a plain chocolate.

.....
(2)

Deon takes 2 chocolates from the box.

(b) Write down all the possible combinations of types of chocolates that Deon can take.

.....
.....
.....
(2)

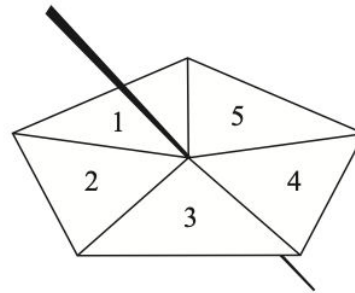
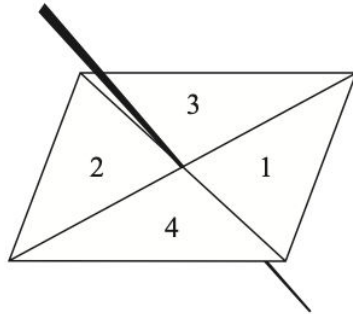
(Total for Question 7 is 4 marks)

Pearson Edexcel – Specimen 2 - Paper 2 (Calculator) Foundation Tier

12.

19 Here are a 4-sided spinner and a 5-sided spinner.

The spinners are fair.



Jeff is going to spin each spinner once.
 Each spinner will land on a number.
 Jeff will get his score by adding these two numbers together.

(a) Complete the possibility space diagram for each possible score.

		5-sided spinner				
		1	2	3	4	5
4-sided spinner	1	2	3	4	5	6
	2	3				
	3	4				
	4	5				

(1)

Jeff spins each spinner once.

(b) Find the probability that Jeff gets

(i) a score of 3

.....

(ii) a score of 5 or more.

.....
(2)

(Total for Question 19 is 3 marks)

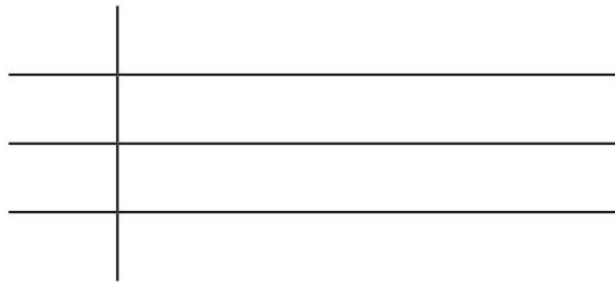
Pearson Edexcel – Specimen 1 - Paper 2 (Calculator) Foundation Tier

13.

13 Here are the heights, in centimetres, of 15 children.

123	147	135	150	147
129	148	149	125	137
133	138	133	130	151

(a) Show this information in a stem and leaf diagram.



(3)

One of the children is chosen at random.

(b) What is the probability that this child has a height greater than 140 cm?

(2)

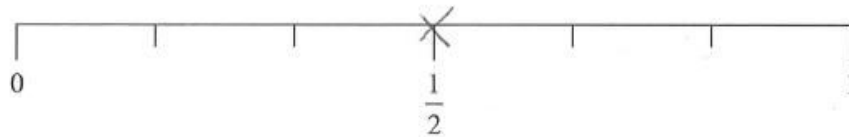
(Total for Question 13 is 5 marks)

Pearson Edexcel – Sample Paper 1 (Non-Calculator) Foundation Tier

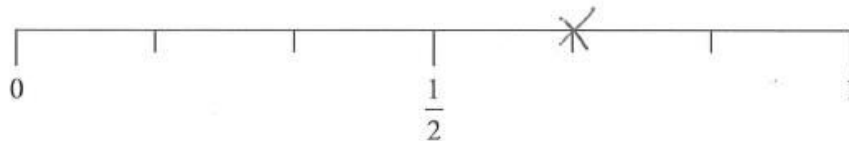
14.

6 Greg rolls a fair ordinary dice once.

- (i) On the probability scale, mark with a cross (×) the probability that the dice will land on an odd number.



- (ii) On the probability scale, mark with a cross (×) the probability that the dice will land on a number less than 5



(Total for Question 6 is 2 marks)

Pearson Edexcel – Sample Paper 1 (Non-Calculator) Foundation Tier

15.

- 9 There are 3 red beads and 1 blue bead in a jar.
A bead is taken at random from the jar.

What is the probability that the bead is blue?

$$\frac{1}{4}$$

(Total for Question 9 is 1 mark)

Pearson Edexcel – Sample Paper 1 (Non-Calculator) Foundation Tier

16.

- 11 Sally has three tiles.
Each tile has a different number on it.
Sally puts the three tiles down to make a number.
Each number is made with all three tiles.



How many different numbers can Sally make?

123
132
213
231
312
321

6

(Total for Question 11 is 2 marks)

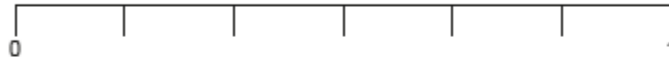
OCR – Tuesday 03 November 2020- Morning - Paper 1 (Calculator) Foundation Tier

17.

- 6 A bag contains 12 counters.
6 are red, 4 are blue and 2 are yellow.
A counter is taken from the bag at random.

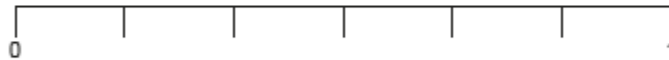
Mark with an arrow (\downarrow) the probability the counter is

(a) red,



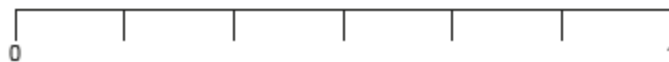
[1]

(b) yellow,



[1]

(c) green.



[1]

OCR Thursday 05 November 2020- Morning (Non-Calculator) Foundation Tier

18.

- 13 A bag only contains red, blue, yellow and white counters.
A counter is taken at random from the bag.
The table shows the probability it is red and the probability it is blue.

Colour	red	blue	yellow	white
Probability	0.24	0.34		

There are twice as many yellow counters as white counters in the bag.

Complete the table.

[5]

19.

17 Dora has the following number cards.



She takes a card at random, replaces the card and then takes a second card. She adds the numbers on the two cards she has taken and records the total.

(a) Complete the following table to show all of her possible totals.

		First card				
		2	2	3	5	6
Second card	Total					
	2	4	4	5	7	8
	2	4	4	5		8
	3	5	5		8	9
	5	7		8	10	11
6	8	8	9	11	12	

[1]

(b) Find the probability that her total is

(i) an even number,

(b)(i) [2]

(ii) a multiple of 3 or 4.

(ii) [2]

OCR Tuesday 5 November 2019 – Morning (Calculator) Foundation Tier

20.

8 Plaza United are playing a football match away from home.

(a) 379 supporters are going to the match by coach.
Each coach seats 45 people.

What is the smallest number of coaches that will be needed?

(a) [2]

(b) In their last 50 matches, Plaza United have drawn 10 matches, lost 5 and won the rest.

Sam claims

The probability that Plaza United will win this match is 0.7.

(i) Show calculations to support Sam's claim. [2]

(ii) Give one reason why Sam's claim may not be reliable.

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

OCR Tuesday 21 May 2019 – Morning (Calculator) Foundation Tier

21.

5 Lev (L), Maria (M) and Nicholas (N) sit in a row of three seats.

- (a) Use the table to list all the different orders in which they could sit.
One possible order is already shown in the table.
You may not need to use all the rows in the table.

Seat 1	Seat 2	Seat 3
L	M	N

[2]

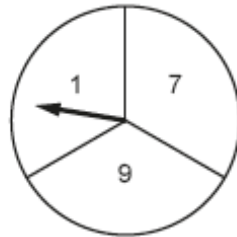
- (b) All possible orders in which they could sit are equally likely.

What is the probability that Lev (L) sits next to Maria (M)?

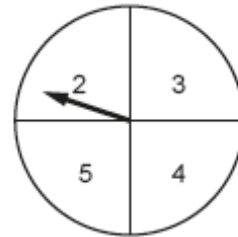
(b) [1]

22.

16 Geoff has two fair spinners.



Spinner A



Spinner B

He spins both spinners and **multiplies** the numbers on each spinner.

(a) Complete the table.

		Spinner A		
		1	7	9
Spinner B	2	2	14	18
	3	3	21	27
	4	4	28	
	5	5	35	

[1]

(b) Geoff wants to work out the probability that the outcome of the multiplication is an even number or a prime number. Here is his working.

The probability the outcome is an even number is $\frac{6}{12}$.

The probability the outcome is a prime number is $\frac{3}{12}$.

The probability the outcome is an even number or a prime number is $\frac{6}{12} + \frac{3}{12} = \frac{9}{12}$.

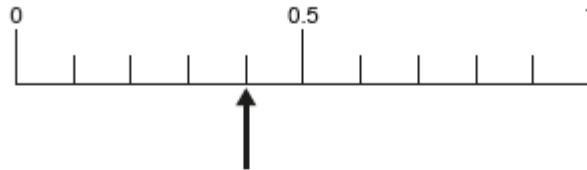
Geoff is wrong.
Explain his error and give the correct answer.

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

23.

- 5 A fair spinner has five sides.
Each side is labelled **A** or **B**.

This diagram shows a probability scale.

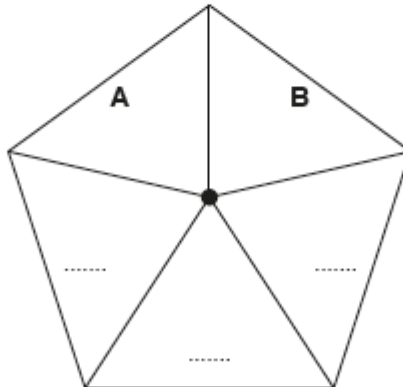


The arrow shows the probability that the spinner lands on an **A**.

- (a) Circle the word that best describes this probability.

Likely Impossible Unlikely Certain [1]

- (b) Here is the spinner with two sides labelled.

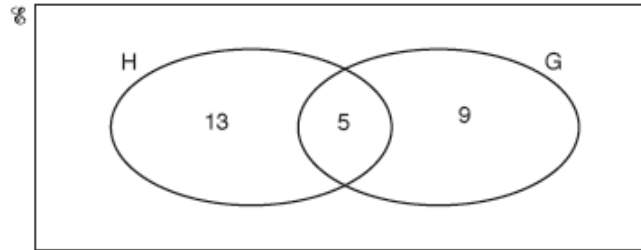


Label the other sides with **A** or **B** to give the correct probability of landing on an **A**. [2]

OCR Thursday 7 June 2018 – Morning (Non Calculator) Foundation Tier

24.

- 10 (a) This Venn diagram shows the number of students in a Year 10 tutor group who study History (H) and Geography (G).



There are 29 students in the tutor group.

- (i) How many students in the tutor group do not study History or Geography?

(a)(i) [2]

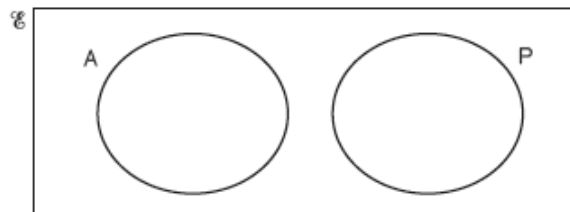
- (ii) How many students in the tutor group study History?

(ii) [1]

- (iii) One of the 29 students is selected at random.
What is the probability that they study Geography but do not study History?

(iii) [1]

- (b) This diagram represents students in a tutor group who study Art (A) and Physics (P).



How many students study both Art and Physics?

(b) [1]

OCR Tuesday 12 June 2018– Morning (Calculator) Foundation Tier

25.

- 7 (a) Frances has three cards: Ace (A), King (K) and Queen (Q). She shuffles these cards and deals them one at a time.

- (i) List all the different orders in which she can deal the cards. One possible order is already shown in the table. You may not need to use all the rows.

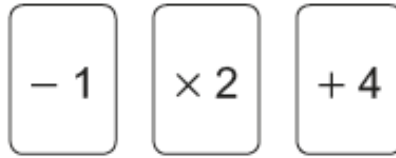
First card	Second card	Third card
A	K	Q

[2]

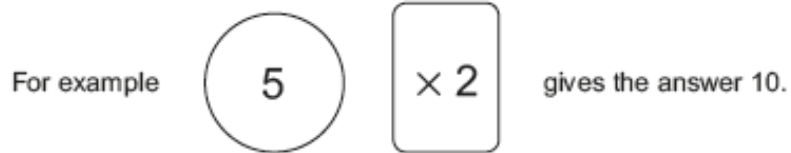
- (ii) Find the probability that, in the three cards Frances deals, the King (K) is dealt immediately after the Queen (Q).

(ii) [1]

- (b) A counter has 3 on one side and 5 on the other.
Lena flips the counter.
She then picks one of these three cards at random.



Lena puts the card next to the counter and works out the answer.



Find the probability that Lena gets an answer **less than 8**.
You must show your working.

OCR Thursday 2 November 2017– Morning (Calculator) Foundation Tier

26.

- 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	

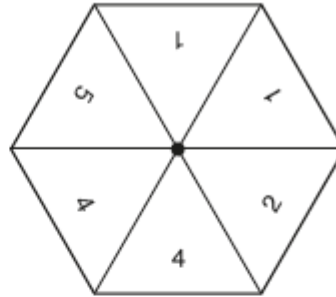
Work out the probability that Bill chooses the white car.

..... [2]

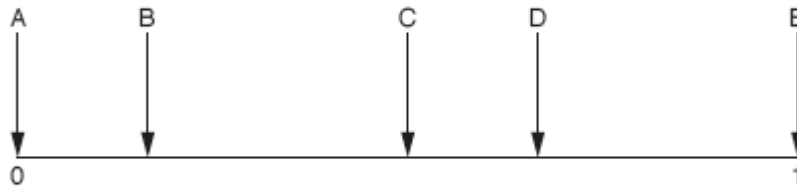
OCR Monday 6 November 2017– Morning (Calculator) Foundation Tier

27.

- 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?

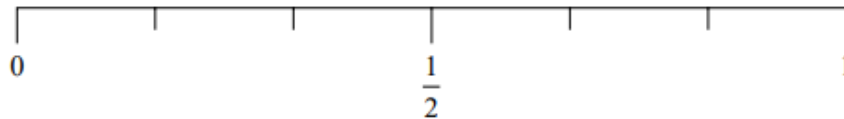
(c) [1]

Pearson Edexcel – Sample Papers - Paper 1 (Non-Calculator) Foundation Tier

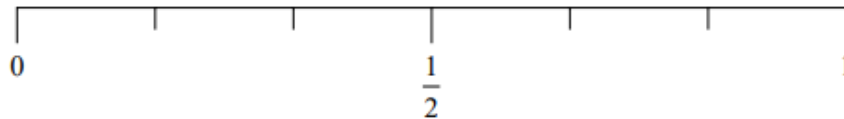
28.

6 Greg rolls a fair ordinary dice once.

- (i) On the probability scale, mark with a cross (×) the probability that the dice will land on an odd number.



- (ii) On the probability scale, mark with a cross (×) the probability that the dice will land on a number less than 5



(Total for Question 6 is 2 marks)

29.

9 There are 3 red beads and 1 blue bead in a jar.
A bead is taken at random from the jar.

What is the probability that the bead is blue?

(Total for Question 9 is 1 mark)

Pearson Edexcel – Sample Papers - Paper 2 (Calculator) Foundation Tier

30.

- 5** There are some boys and girls in a classroom.

The probability of picking at random a boy is $\frac{1}{3}$

What is the probability of picking a girl?

(Total for Question 5 is 1 mark)

Pearson Edexcel – Sample Papers - Paper 3 (Calculator) Foundation Tier

31.

- 15** There are 25 boys and 32 girls in a club.

$\frac{2}{5}$ of the boys and $\frac{1}{2}$ of the girls walk to the club.

The club leader picks at random a child from the children who walk to the club.

Work out the probability that this child is a boy.

(Total for Question 15 is 3 marks)

OCR Sample Question Paper 3 – Morning/Afternoon (Calculator) Foundation Tier

32.

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]**

(b) Ann, Bob and Carol have a total budget of £500 to rent a holiday apartment. The apartment normally costs £50 per night, but they can get a 20% discount if they book early.

Calculate how many extra nights they can stay in the apartment if they book early.

(b) nights **[4]**

33.

19 Bags X and Y each contain counters.

<p style="text-align: center;">Bag X 30 counters Each counter is green, white or yellow</p>
--

<p style="text-align: center;">Bag Y 5 counters 3 green and 2 red</p>
--

19 (a) $P(\text{green counter from X}) = P(\text{red counter from Y})$

Work out the number of green counters in X.

[2 marks]

Answer _____

19 (b) All 35 counters are put into one bag.

One counter is picked at random.

Work out the probability that the counter is **not** red.

[2 marks]

Answer _____

AQA Tuesday 6 November 2018 – Morning (Non-Calculator) Foundation Tier

34.

11 A fair dice has six sides, numbered 1 to 6
After it is rolled, five of the numbers can be seen.

11 (a) Write down the probability that one of these five numbers is 2

[1 mark]

Answer _____

11 (b) Work out the **greatest** possible sum of the five numbers.

[2 marks]

Answer _____

AQA Tuesday 6 November 2018 – Morning (Non-Calculator) Foundation Tier

35.

21 Here are five number cards.



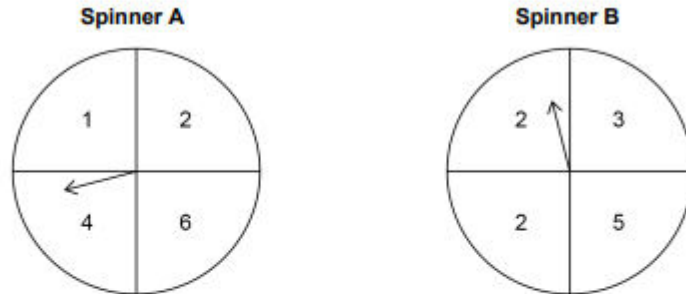
Two of the five cards are picked at random.

Work out the probability that the total of the two numbers is **more than 30**

[3 marks]

36.

13 In a game, two fair spinners are spun.



If the numbers the arrows land on are different, the score is the **higher** number.
 If the numbers the arrows land on are the same, the score is 0

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

[2 marks]

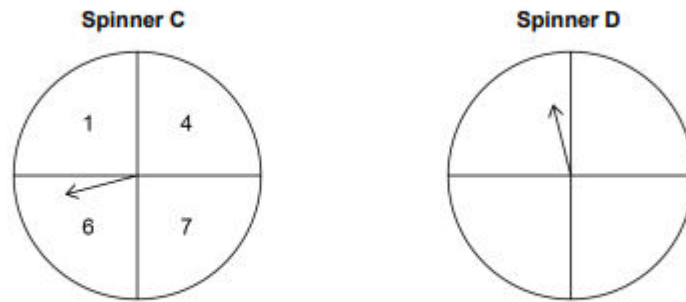
		Spinner B			
		2	2	3	5
Spinner A	1	2			
	2		0		
	4				
	6				

13 (b) Write down the probability that the score is an **odd** number.

[1 mark]

Answer _____

- 13 (c) The same game is played using spinners C and D.
The numbers on C are shown.



The table shows some of the possible scores.

		Spinner D			
Spinner C	1	4			
	4		0		
	6				
	7			0	8

Write the missing numbers on spinner D.

[2 marks]

AQA Thursday 7 June 2018 – Morning (Calculator) Foundation Tier

37.

- 25 On three days, Ali throws darts at a target.
Here are his results.

	Number of throws	Number of hits	Number of misses
Monday	20	15	5
Tuesday	30	22	8
Wednesday	40	17	23
Total	90	54	36

- 25 (a) Work out **two** different estimates for the probability of Ali hitting the target.

[2 marks]

Answer _____ and _____

- 25 (b) Which of your two answers is the better estimate for the probability of Ali hitting the target?

Give a reason for your answer.

[1 mark]

Answer _____

Reason _____

AQA Tuesday 12 June 2018 – Morning (Calculator) Foundation Tier

38.

20

The probability that A is the outcome of an experiment is 0.2

Circle the probability that A is **not** the outcome.

[1 mark]

0

0.2

0.5

0.8

AQA Thursday 2 November 2017 – Morning (Non-Calculator) Foundation Tier

39.

- 9 In a game, three stars are hidden at random.
Each star is behind a different square on this board.

	A	B	C	D	E
1					
2					
3					
4					
5					

- 9 (a) A square is chosen at random.
What is the probability that there is a star behind it?

[1 mark]

Answer _____

- 9 (b) In one game, the stars are behind three consecutive squares.
The squares are in one row or one column.
One of the squares is E2

Write down **all** the possible pairs for the other two squares.

[2 marks]

Answer _____

AQA Thursday 2 November 2017 – Morning (Non-Calculator) Foundation Tier

40.

13 A bus can be early, on time or late.

The probability that the bus is early is 0.1

The probability that the bus is on time is 0.6

Work out the probability that the bus is late.

[2 marks]

Answer _____

AQA Monday 6 November 2017 – Morning (Calculator) Foundation Tier

41.

- 21** An experiment is carried out 200 times.
The possible outcomes are K, L and M.

21 (a) Complete the table.

[2 marks]

Outcome	K	L	M
Frequency	84	54	
Relative frequency	0.42		

- 21 (b)** Altogether, the experiment is carried out 500 times.

How many times would you expect the outcome to be K?

[2 marks]

Answer _____

AQA Wednesday 8 November 2017 – Morning (Calculator) Foundation Tier

42.

2 A fair ordinary dice is thrown once.

Circle the probability of getting a 2 or a 3

[1 mark]

$$\frac{1}{6}$$

$$\frac{2}{6}$$

$$\frac{3}{6}$$

$$\frac{5}{6}$$

AQA Wednesday 8 November 2017 – Morning (Calculator) Foundation Tier

43.

11 A fair spinner has 12 equal sections.

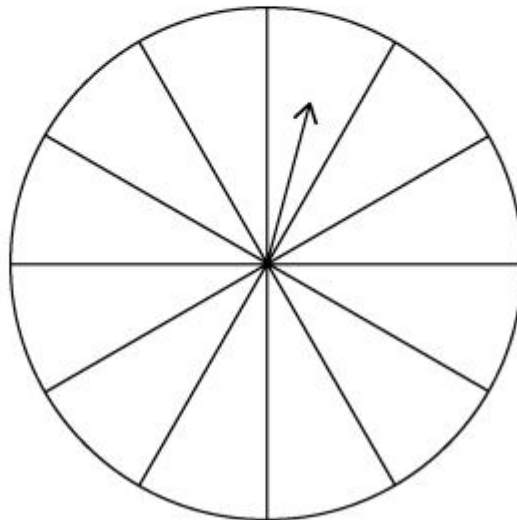
Label each section A, B, C or D so that when the arrow is spun,

the probability it lands on A is $\frac{1}{6}$

the probability it lands on B is **equal** to the probability it lands on C

the probability it lands on D is **double** the probability it lands on A.

[3 marks]



AQA Thursday 8 June 2017– Morning (Calculator) Foundation Tier

44.

25 The table shows information about some CDs.

Type	Rock	Pop	Jazz
Number of CDs	2	x	$2x + 5$

A CD is chosen at random.

The probability it is **rock** is $\frac{1}{20}$

Work out the probability it is jazz.

[4 marks]

Answer _____

AQA Tuesday 13 June 2017 Morning– Morning (Calculator) Foundation Tier

45.

12 Put these probabilities in order, starting with the least likely.

44%

$\frac{1}{4}$

0.404

$\frac{4}{10}$

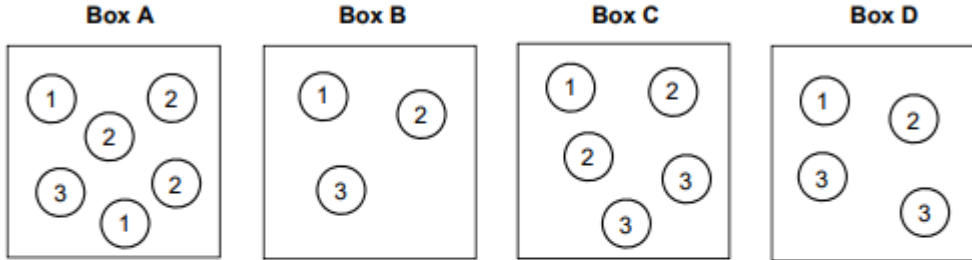
[2 marks]

Answer _____ , _____ , _____ , _____

AQA Sample Paper 3– Morning (Calculator) Foundation Tier

46.

- 6 Boxes A, B, C and D contain balls with numbers on them.



A ball is picked at random from each box.

- 6 (a) Which box gives the **greatest** chance of picking a 3?
You **must** show your working.

[2 marks]

Box _____

- 6 (b) Which two boxes give the **same** chance of picking a 1?

[1 mark]

Box _____ and Box _____