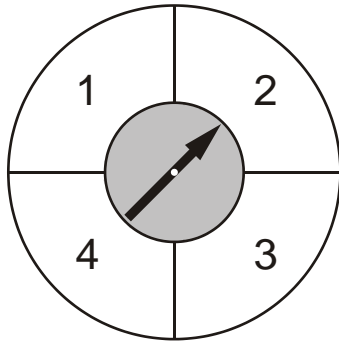
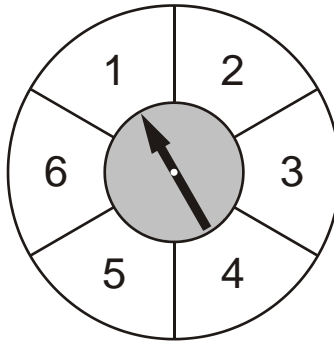


1. Here are two spinners, P and Q.

Spinner P has 4 equal sections.  
Spinner Q has 6 equal sections.



P



Q

Ben spins the pointer on each spinner.

For each statement below, put a tick (✓) if it is correct.  
Put a cross (✗) if it is not correct.



Ben is **more likely** to score 4  
on spinner P than on spinner Q.

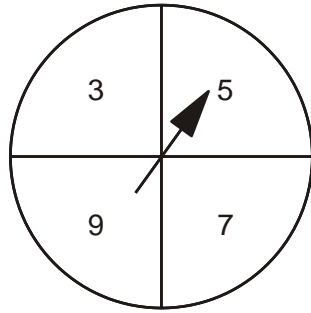
The score on spinner P is **certain** to be less  
than the score on spinner Q.

Ben is **equally likely** to score an even number  
on spinner P and spinner Q.

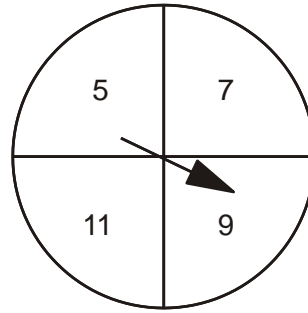
A score of less than 3 is **equally likely**  
on spinner P and spinner Q.

2 marks

2. Here are two spinners, A and B.



A



B

Hassan spins the pointer on each spinner.

He adds his two scores together.

For each statement put a tick (✓) to show if it is **certain**, **possible** or **impossible**.

One has been done for you.



	certain	possible	impossible
The total will be more than 15	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
The total will be an even number	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The total will be less than 6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The score on A will be less than the score on B.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2 marks

3. Sapna makes up a game using seven cards.

Here are the cards.



Josh picks a card without looking.

If Josh picks an **odd** number then Sapna scores a point.

If Josh picks an **even** number then Josh scores a point.

Is this a fair game?

Circle Yes or No.

 Yes / No

Explain how you know.



.....

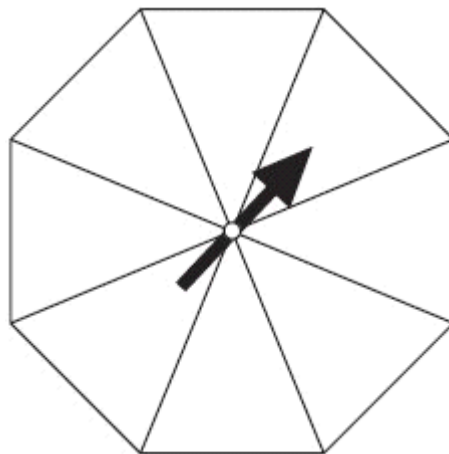
.....

.....

1 mark

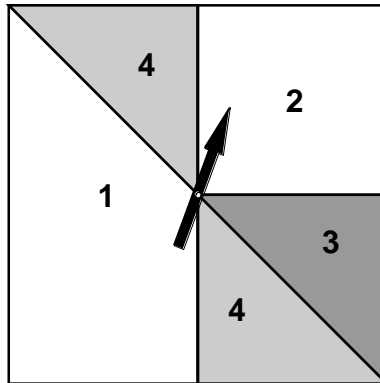
4. Here is a spinner which is a regular octagon.

Write 1, 2 or 3 in each section of the spinner so that **1 and 2 are equally likely** to come up and **3 is the least likely** to come up.



2 marks

5. Here is a square spinner.



Look at these statements.

For each one put a tick (✓) if it is **correct**.  
Put a cross (✗) if it is **not correct**.



'4' is the **most likely** score.

'2' and '4' are **equally likely** scores.

Odd and even scores are **equally likely**.

A score of '3' or more is **as likely as** a score of less than '3'.

2 marks

6. Dan has a bag of seven counters numbered 1 to 7

Abeda has a bag of twenty counters numbered 1 to 20

Each chooses a counter from their own bag without looking.

For each statement, put a tick (✓) if it is **true**.

Put a cross (✗) if it is **not true**.



Dan is **more likely** than Abeda to choose a '5'

They are both **equally likely** to choose a number less than 3

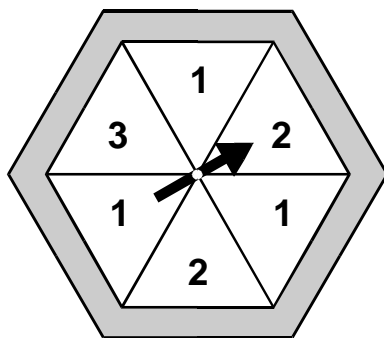
Dan is **more likely** than Abeda to choose an **odd number**.

Abeda is **less likely** than Dan to choose a '10'

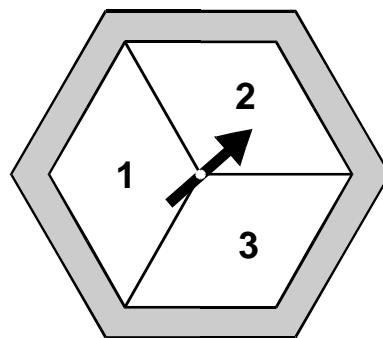
2 marks

7. Here are two spinners, A and B.

Each one is a regular hexagon.



A



B

For each statement, put a **tick** (✓) if it is **true**.

Put a **cross** (✗) if it is **not true**.



Scoring '1' **is more likely** on A than on B.

Scoring '2' **is more likely** on A than on B.

Scoring '3' **is as equally likely** on A as on B.

1 mark

Zara spins both spinners.

The score on A is added to the score on B.

She says,

***'The sum of the scores on both spinners is certain to be less than 7'.***

Is she correct?

Circle Yes or No.



**Yes / No**

Explain how you know.



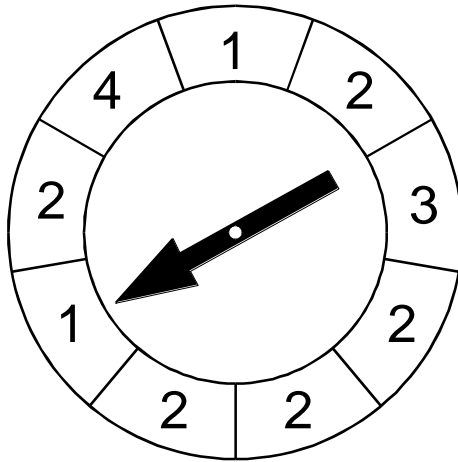
.....

.....


.....

1 mark

8. The spinner is divided into **nine** equal sections.



Which **two different numbers** on the spinner are equally likely to come up?

  and

1 mark

Meera says,

***'2 has a greater than even chance of coming up'.***

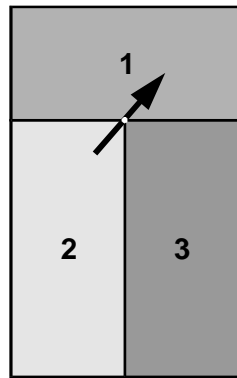
Explain why she is correct.



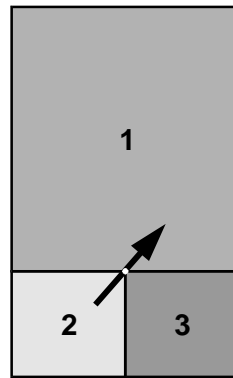
.....  
.....  
.....

1 mark

9. Katie made two spinners, **A** and **B**.



spinner A



spinner B

She says,

***'Scoring a 1 on spinner A is just as likely as scoring a 1 on spinner B'.***

Explain why Katie is correct.



.....

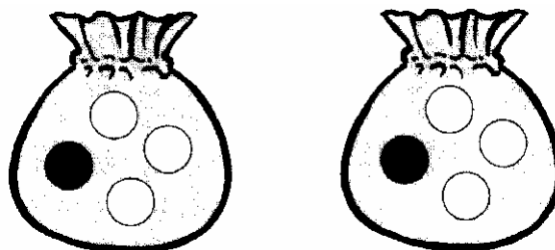
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.....

1 mark

10. Here are two bags.

Each bag has **3 white balls** and **one black ball** in it.

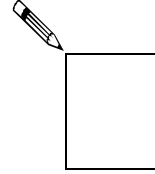


A ball is taken from **one of the bags** without looking.



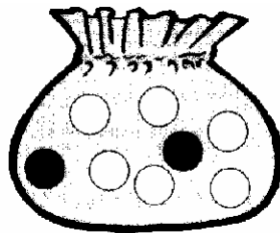
What is the probability that it is a **black ball**?

Give your answer as a fraction.



1 mark

All the balls from **both bags** are now mixed together in a new bag.

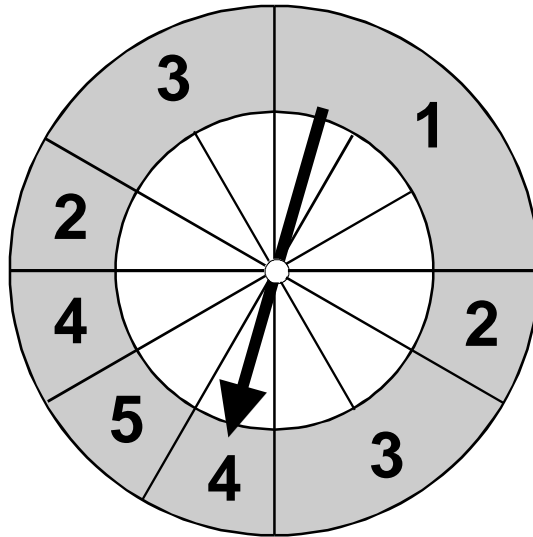


Put a **cross (X)** on this line to show the probability of taking a **black ball** from the new bag.



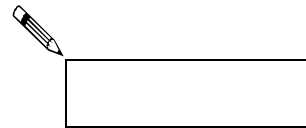
1 mark

11. The outer ring of this spinner has **8 sections** labelled with the numbers **1 to 5**.  
The inner ring has **12 equal sections** on it.



Laura spins the pointer.

Which is the pointer **most likely** to stop on?



s1 mark

Give a reason for your answer.



.....

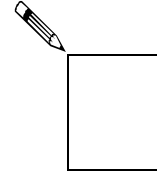
.....

.....

1 mark

What is the probability of getting an **even number** on this spinner?

Give your answer as a fraction.



1 mark

12. Samir spins a **fair** coin and records the results.



In the first four spins **'heads'** comes up each time.

1st spin	2nd spin	3rd spin	4th spin
Head	Head	Head	Head

Samir says,

***'A head is more likely than a tail.'***

Is he **correct**? Circle Yes or No.



**Yes / No**

Give a reason for your answer.



.....

.....

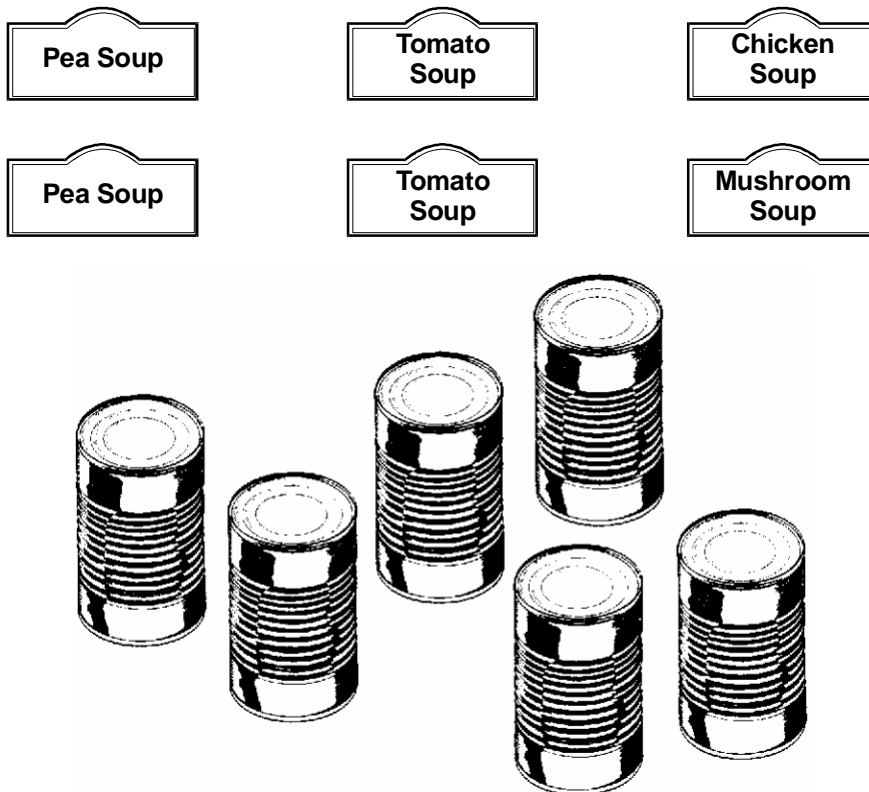
.....

1 mark

13. Harry has **six** tins of soup.

The labels have fallen off.

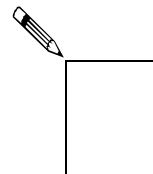
Here are the labels and tins.



Harry chooses a tin.

What is the **probability** that it is a tin of **Pea Soup**?

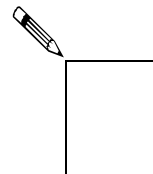
Give your answer as a fraction.



1 mark

What is the **probability** that the tin he chooses is **NOT** a tin of **Tomato Soup**?

Give your answer as a fraction.



1 mark

14. A special dice has the numbers 1 to 6 on it. It is in the shape of a **cuboid** so that a 6 or a 1 is **less likely** to come up than a 2, 3, 4 or 5.



The probability of rolling a **6** is **0.1**

The probability of rolling a **1** is **0.1**

The numbers **2, 3, 4** or **5** each have an **equal probability** of coming up.

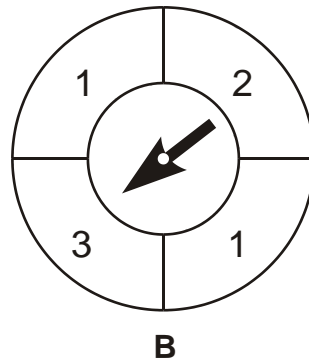
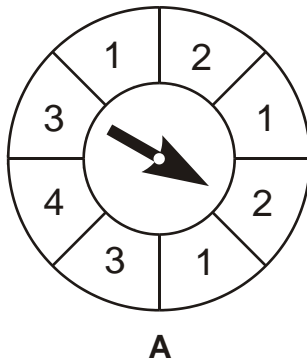
Calculate the probability of rolling a **5** with this dice.

Show your **method**.  
You may get a mark.

cm

2 marks

15. Lee has two spinners.



What is the probability of spinning a **4** on **spinner A**?

Write your answer as a fraction.

1 mark

On which spinner is he **more likely** to get a **1**?

Give a reason for your answer.



.....

.....

.....

1 mark

Lee says,

***'I am equally likely to get a 2 on spinner A as on spinner B'.***

Explain why he is correct.



.....

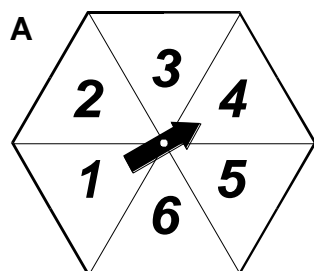
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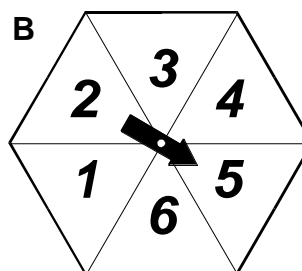
1 mark

16. Megan spins the pointers on these two spinners.

She adds the numbers together to make a **total**.



Total 9

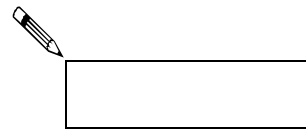


Here is a table to show all the possible totals.

		Number on Spinner B					
		1	2	3	4	5	6
Number on Spinner A	1	2	3	4	5	6	7
	2	3	4	5	6	7	8
	3	4	5	6	7	8	9
	4	5	6	7	8	9	10
	5	6	7	8	9	10	11
	6	7	8	9	10	11	12

Use the table to answer these questions.

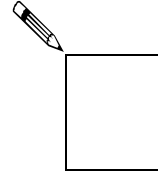
What is the **most likely** total?



1 mark



What is the **probability** of getting a total of 1?



1 mark

The total 3 and the total 11 are equally likely.

Explain how the table shows this.



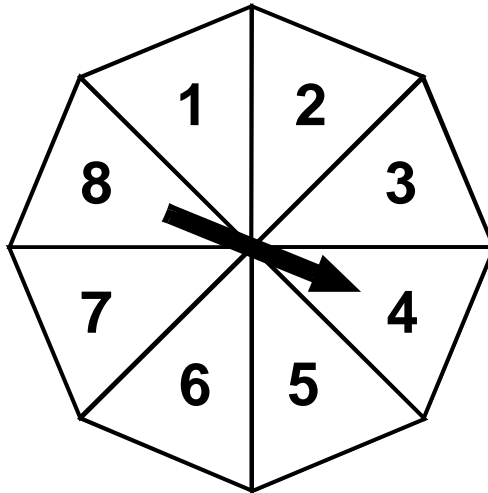
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1 mark

17. Mel uses an **8-sided** spinner.



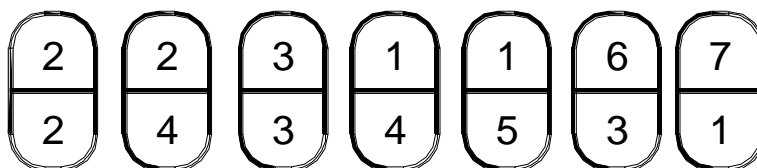
Draw lines to show how **likely** the following are.



a number less than 10	impossible
the number 11	unlikely
the same number three times in a row	even chance
an odd number	likely
	certain

2 marks

18. **Seven** number cards are in a bag.

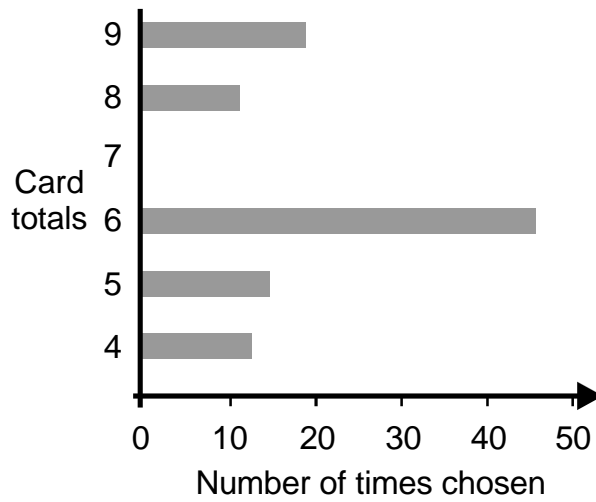


Jill takes one card out and finds the total of the two numbers. She then puts the card back in the bag.

This is a graph of Jill's results after doing this **100 times**.



**Graph of totals of 100 choices**



Give the reason why the **'total 7'** never came up.



.....

.....

1 mark

Give the reason why the **'total 6'** came up **most often**.



.....

.....

1 mark