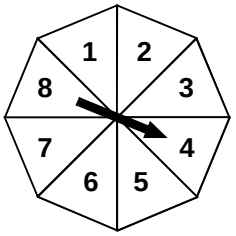
Probability KS2 SATS Standard Worksheet

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

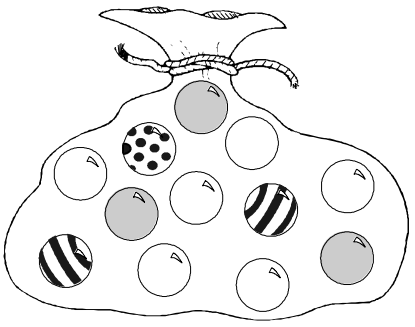


Draw lines to show how **likely** the following are.

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

2 marks

2.



Key	
	striped
	spotty
	white
	grey

These marbles are hidden in a bag. The bag is shaken.

Pete pulls out one marble without looking.

(a) Which kind of marble is Pete most likely to pull out?

1 mark

(b) Explain how you know.

.....

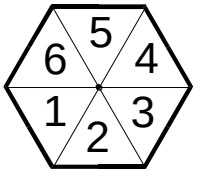
.....

.....

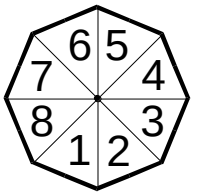
1 mark

3. Here are two spinners.

Jill's spinner



Peter's spinner



Jill says,

"I am more likely than Peter to spin a 3."

Give a reason why she is correct.

Jill is correct because .....

.....

1 mark

Peter says,

"We are both equally likely to spin an even number."

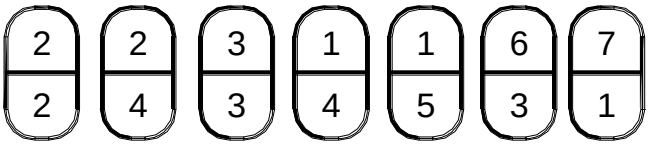
Give a reason why he is correct.

Peter is correct because .....

.....

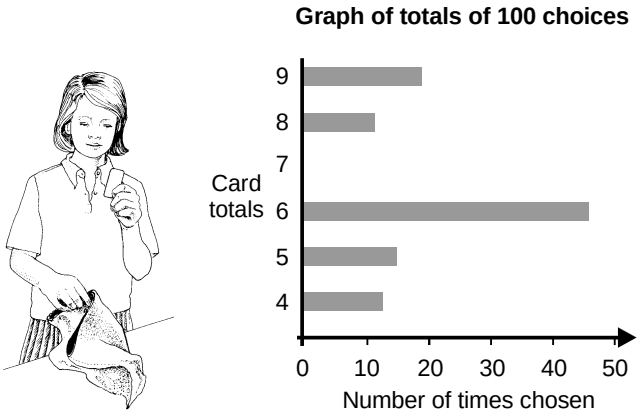
1 mark

4. **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**.



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

.....

.....

1 mark

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

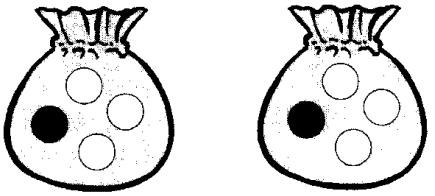
.....

.....

1 mark

5. Here are two bags.

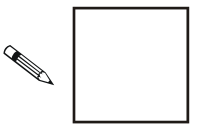
Each bag has **3 white balls** and **one black ball** in it.



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

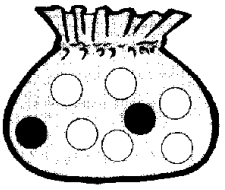
What is the probability that it is a **black ball**?

Give your answer as a fraction.

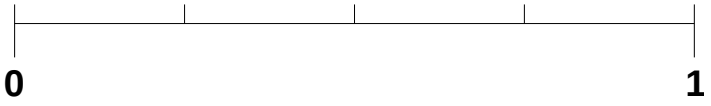


1 mark

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

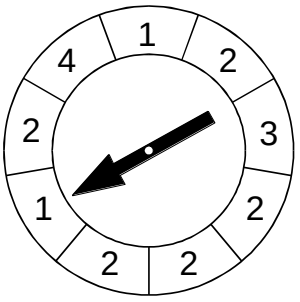


Put a **cross (x)** on this line to show the probability of taking a **black ball** from the new bag.



1 mark

6. 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.

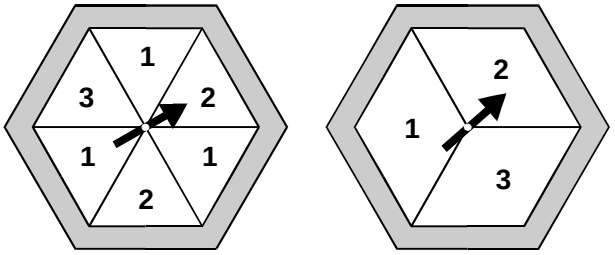
.....

.....

1 mark

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**

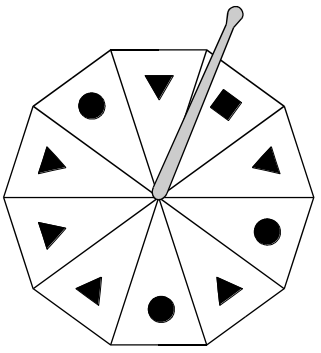
Explain how you know.

……

……

1 mark

8. Imagine you have this 10-sided spinner.



How likely are you to spin these shapes on your first spin?

Draw lines.

certain

most likely

least likely

impossible

1 mark

9. When a coin is tossed the probability of heads is a half and the probability of tails is half.

The coin is **tossed twice**.

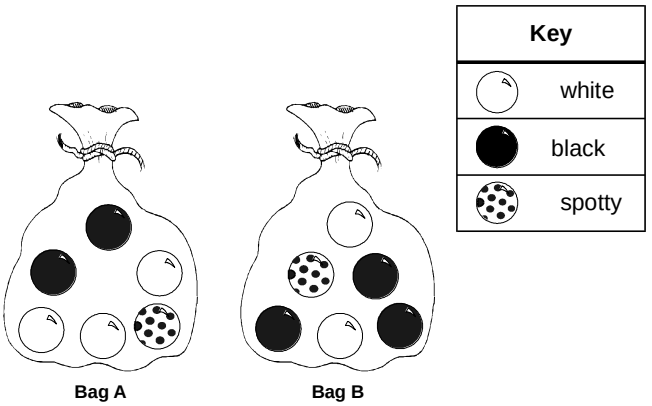
The **first** time the coin is tossed it lands **heads**.

Circle the value to show the probability that the coin lands **heads** the **second** time it is tossed?

0 $\frac{1}{4}$ $\frac{1}{2}$ $\frac{3}{4}$ 1

1 mark

10. Each of these bags is shaken.

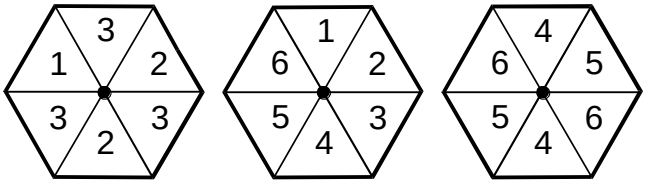


John takes a ball from each bag without looking.

From which bag is the probability of taking a **white ball** the **same** as the probability of taking a **black ball**? 1 mark

---

11. Sam has 3 different spinners.



He chooses **ONE** of his spinners.
He spins it **100** times and writes down how it lands each time.
The results of the 100 spins are numbers only from 1 to 3.

Which spinner do you think he is using?

Spinner ☐

Give **ONE** reason why you chose this one.

.....

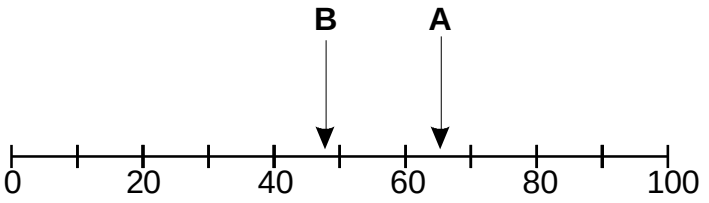
.....

1 mark

Sam spins **A** 100 times and **B** 100 times.
The arrows on the line show how many times each spinner lands on an **odd number.**

He spins **C** 100 times.

Put an arrow on the line to show your estimate of how many times spinner **C** will land on an **odd number**.



1 mark

Show how you worked out your estimate.

1 mark

12. Kim wants to **estimate** the probability that her friend Tony will answer the phone when she rings the house.

Here are two ways she could do it.

A **There are four people in the house, so there is a probability of 1 out of 4 it will be Tony.**

B **The last time Kim rang, Tony answered, so it won't be Tony this time.**

Kim says **A** is **not** a good way to estimate the probability.

Explain why not.

.....

.....

1 mark

She also says **B** is **not** a good way to estimate the probability.

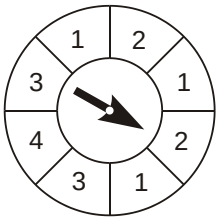
Explain why not.

.....

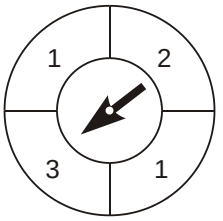
.....

1 mark

13. Lee has two spinners.



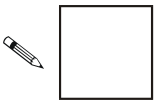
A



B

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.

.....

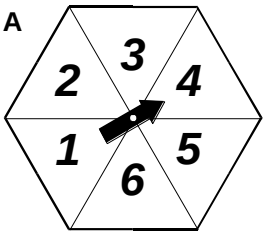
.....

1 mark

14. Megan spins the pointers on these two spinners.

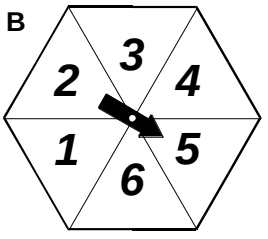
She adds the numbers together to make a **total**.

A



Total 9

B



Here is a table to show all the possible totals.

Number on Spinner A \ Number on Spinner B	1	2	3	4	5	6
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.

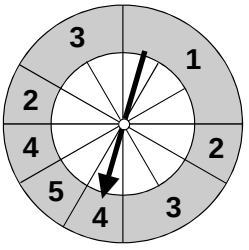
.....

.....

1 mark

15. 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?

1 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

16. 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.

.....

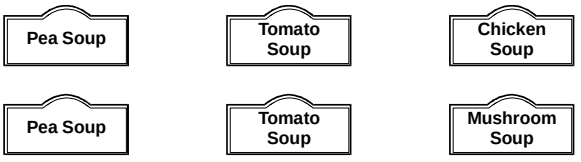
.....

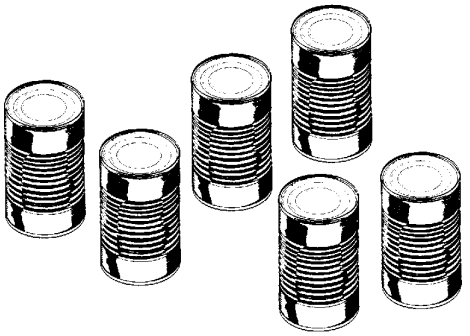
1 mark

17. 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.

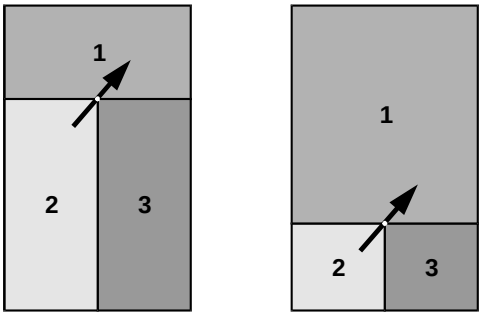
1 mark

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

Give your answer as a fraction.

1 mark

18. 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.

.....

.....

.....

1 mark

19. 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.

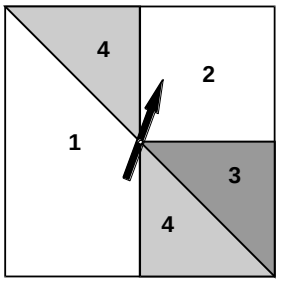
For each statement, put a tick (✓) if it is **true.**

Put a cross (***X***) 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

20. Here is a square spinner.



Look at these statements.

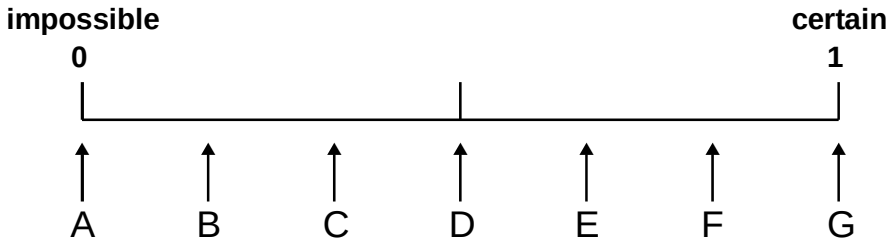
For each one put a tick (✓) if it is **correct**.
Put a cross (✘) if it is **not correct**.

'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

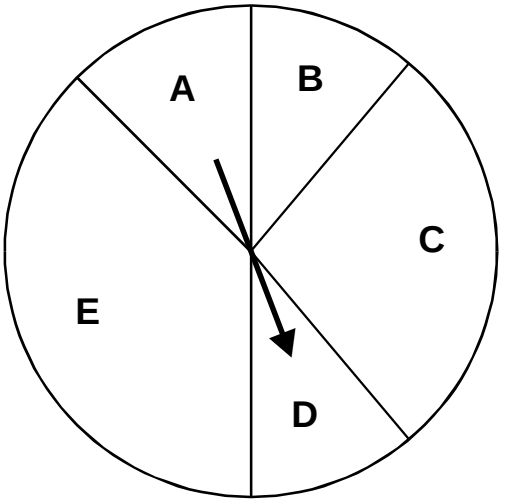
21. A fair dice has the numbers 2, 2, 2, 2, 5 and 5 on it.
The dice is rolled.

Circle the arrow which shows the **probability** of getting a **2**.



1 mark

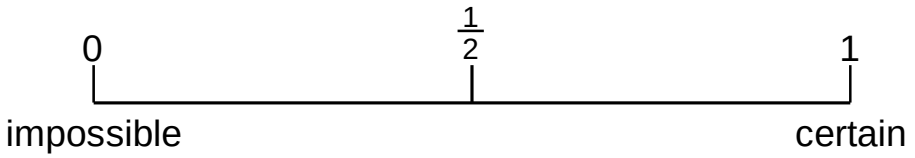
22. Here is a spinner



Anne spins the arrow.

What is the **probability** that the arrow stops in **sector E**?

Show this probability by putting a cross (X) on the probability line below.



1 mark