

Booster Pages KS2



Probability

Level 4/5

Number of practice sheets: 10

MathSphere

Notes

Moving from level 4 to level 5 on probability demands much more clarity in answering. Usually the questions ask that the answer is put in the form of a fraction.

Make sure that children understand that when asking for an answer as a fraction $1/8$ is correct, but 1 in 8 will not gain a mark. Decimal fractions eg 0.125 are usually accepted as correct.

When explaining comparisons between spinners it is important to state the probability ie 2 in 5 or $2/5$ compared to 3 in 6 etc
Vague answers such as, “because it is bigger,” or, “it is the same space for both,” will not gain a mark at this higher level.

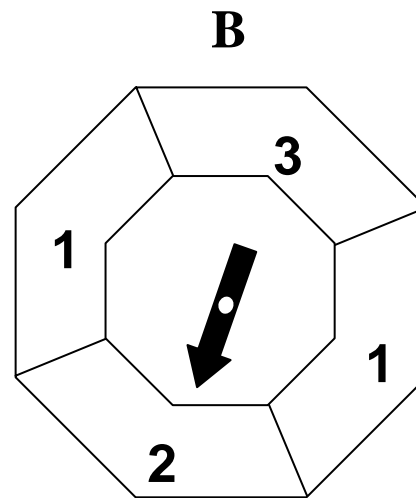
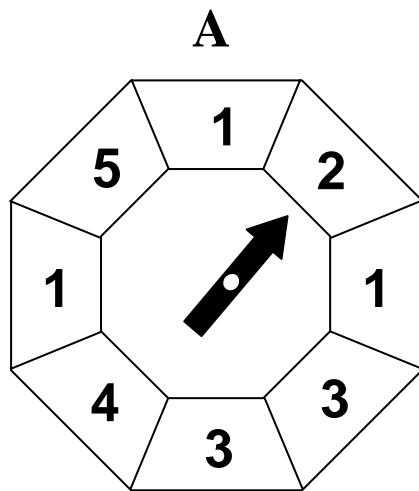
Again the terms ***more likely, less likely and equally likely*** keep re-occurring in the tests.

To work out the probability of an event, first count how many possibilities there are altogether – this will give you the bottom number (denominator) of your fraction. Then work out how many possibilities for the event you are considering – this will give you the top number (numerator).

An understanding of simple equivalent fractions is also needed at this stage.

Children need to know that $1/4$ is equivalent to $2/8$ etc.

Neeta has two spinners.



1. What is the probability of spinning a 5 on **spinner A**?

Write your answer as a fraction.

2. On which spinner is Neeta **more likely** to get a 1.

Give a reason for your answer.

.....

.....

.....

3. Neeta says,

“I am equally likely to get a 3 on spinner A as on spinner B.”

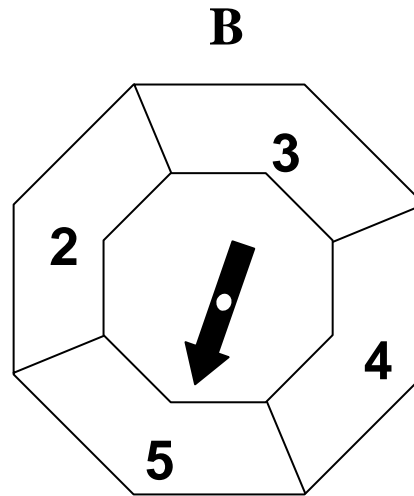
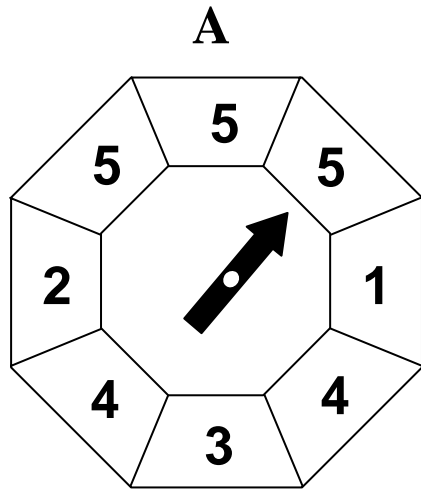
Explain why Neeta is correct.

.....

.....

.....

Zara has two spinners.



1. What is the probability of spinning a 3 on **spinner A**?

Write your answer as a fraction.

2. On which spinner is Zara **more likely** to get a 5.

Give a reason for your answer.

.....

.....

.....

3. Zara says,

“I am equally likely to get a 4 on spinner A as on spinner B.”

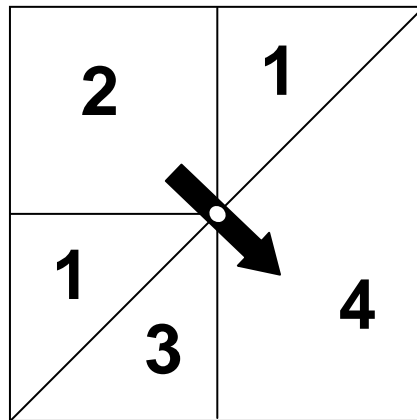
Explain why Zara is correct.

.....

.....

.....

Here is a square spinner.



What happened at the vampires' race?

They finished neck and neck!

Look at these statements.

Put a tick (✓) in the box if the statement is true.

Put a cross (X) in the box if the statement is false.

1. 3 is the least likely score.

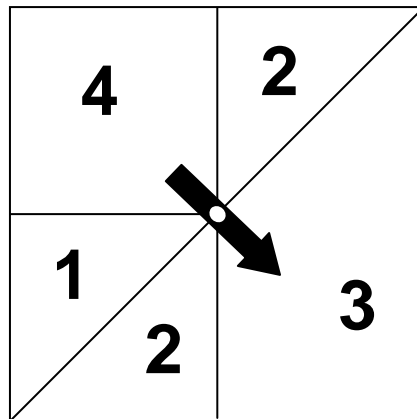
2. 2 is the most likely score.

3. A score of 2 is as likely as a score of 1.

4. A score of 1 is less likely than a score of 4.

5. A score of 2 is more likely than a score of 4.

Here is a square spinner.



What's more dangerous than fooling with a bee?

Being with a fool!

Look at these statements.

Put a tick (✓) in the box if the statement is true.

Put a cross (X) in the box if the statement is false.

1. 3 is the least likely score.

2. 2 is the most likely score.

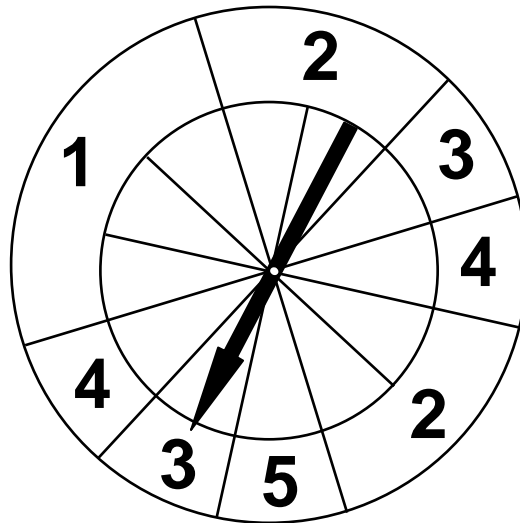
3. A score of 2 is as likely as a score of 4.

4. A score of 1 is less likely than a score of 4.

5. A score of 3 is more likely than a score of 2.

The outer ring of the spinner has **8 parts**, with numbers between **1 and 5**.

The inner ring has **12 equal parts** in it.



Georgia spins the pointer.

1. What number is the pointer **least likely** to stop on?

Give a reason for your answer.

.....

.....

.....

2. Georgia says,
“There is more chance of the spinner stopping on 2 than any other number.”

Give a reason why Georgia is correct.

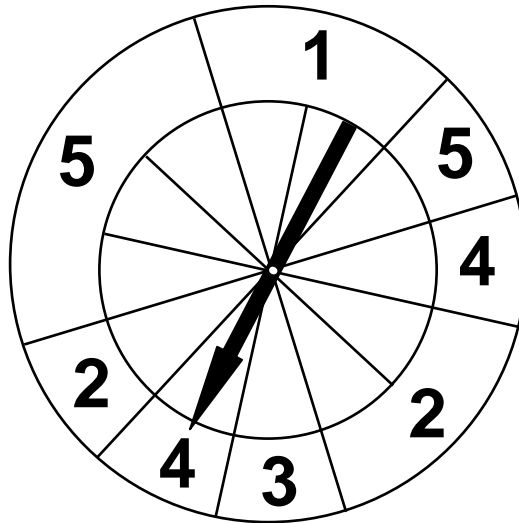
Georgia is correct because.....

.....

.....

The outer ring of the spinner has **8 parts**, with numbers between **1 and 5**.

The inner ring has **12 equal parts** in it.



Rachel spins the pointer.

1. What number is the pointer **most likely** to stop on?

Give a reason for your answer.

.....

.....

.....

2. Rachel says,

“There is an equal chance of the spinner stopping on 1 or 4.”

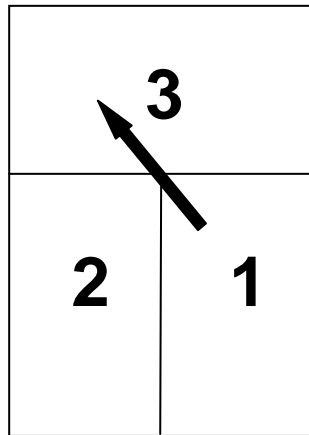
Give a reason why Rachel is correct.

Rachel is correct because.....

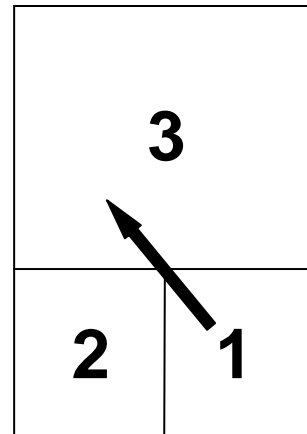
.....

.....

Kevin made two spinners, **A** and **B**



Spinner A



Spinner B

Kevin says,

“ I am just as likely to score 3 on spinner 1 as to score 3 on spinner 2.”

1. Explain why he is correct.

Kevin is correct because.....

.....

.....

2. What is the probability of spinning a 1 on spinner A?

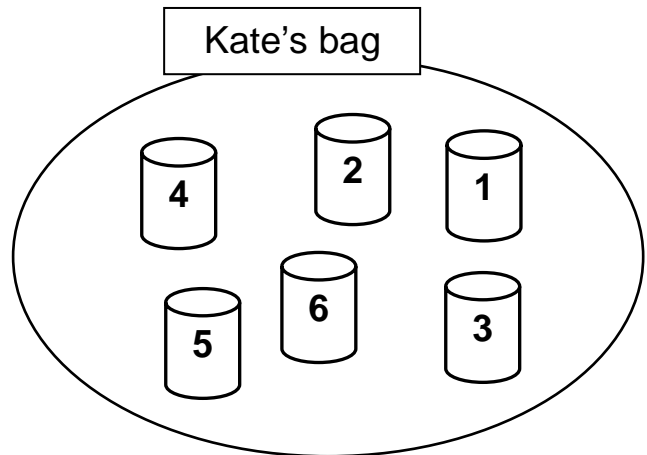
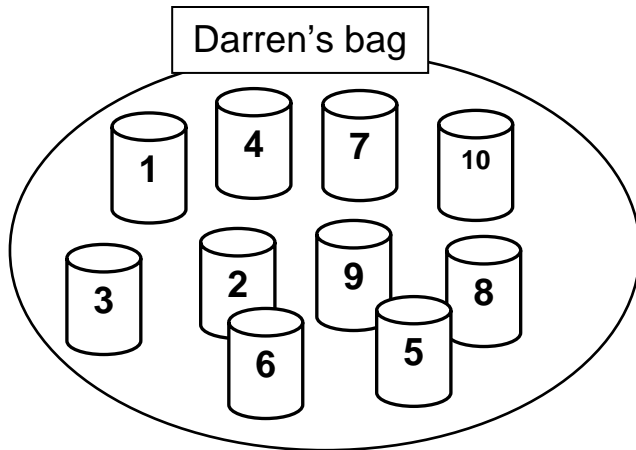
Give your answer as a fraction.

3. What is the probability of spinning a 2 on spinner B?

Give your answer as a fraction.

4. What is the probability of spinning a 3 on spinner A?

Give your answer as a fraction.



Darren has a bag with 10 tins, numbered 1 to 10.

Kate has a bag with 6 tins, numbered 1 to 6.

They each take one tin out of their own bag, without looking.

Look at these statements.

Put a tick (✓) in the box if the statement is true.

Put a cross (X) in the box if the statement is false.

1. Darren is more likely than Kate to take out a 5.

2. Kate is more likely than Darren to take out an even number.

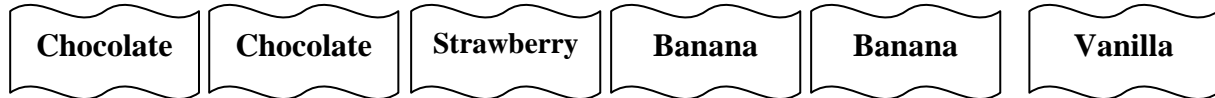
3. They are both equally likely to take out an odd numbered tin.

4. Kate is less likely than Darren to take out a 9.

5. Kate is more likely to take out a number below 3.

McHenry's have 6 milkshakes.
But the labels have fallen off.

Here are the labels and the cartons



Ben chooses a carton.

1. What is the probability that it is a Chocolate milkshake?

Give your answer as a fraction.

2. What is the probability that it is a Strawberry milkshake?

Give your answer as a fraction.

3. What is the probability that it is either chocolate or vanilla?

Give your answer as a fraction.

4. What is the probability that the carton he chooses is not Banana?

Give your answer as a fraction.



I love choccy
Milkshakes!

Eric has a box of 10 bars of chocolate with different fillings.

3 bars are mint

3 bars are strawberry

2 bars are fruit and nut

1 bar is plain

1 bar is milk



Eric picks up one bar without looking.

1. What is the probability that it is a mint flavour bar?

Give your answer as a fraction.

2. What is the probability that it is a plain chocolate bar?

Give your answer as a fraction.

3. What is the probability that it is either strawberry or plain?

Give your answer as a fraction.

4. What is the probability that the chocolate he chooses is not fruit and nut?

Give your answer as a fraction.



I love chocolate
even more.

Answers

Page 3

1. $\frac{1}{8}$ also accept 0.125 or 12 $\frac{1}{2}$ %
Do not accept 1 in 8.
2. Spinner B
Explanation which explains why there is a greater chance of a '1' coming up on spinner B
eg
"because the probability of getting a '1' on A is $\frac{3}{8}$ but on spinner B it is $\frac{2}{4}$ or $\frac{4}{8}$ " and similar.
Do not accept "because it is bigger"
3. Explanation which explains that a $\frac{2}{8}$ chance is the same as $\frac{1}{4}$.

Page 4

1. $\frac{1}{8}$ also accept 0.125 or 12 $\frac{1}{2}$ %
Do not accept 1 in 8.
2. Spinner A
Explanation which explains why there is a greater chance of a '5' coming up on spinner A
eg
"because the probability of getting a '5' on A is $\frac{3}{8}$ but on spinner B it is $\frac{1}{4}$ or $\frac{2}{8}$ " and similar.
Do not accept "because it is bigger"
3. Explanation which explains that a $\frac{2}{8}$ chance is the same as $\frac{1}{4}$.

Page 5

1. true 2. false 3. true 4. true 5. false

Page 6

1. false 2. false 3. true 4. true 5. true

Answers cont.**Page 7**

1. 5 explanation which implies that 5 has less 'inner ring' sections than the other numbers. (1/12 chance which is less than the others.) Do not accept vague answers such as "there is less of them".
2. explanation which implies that 2 has more 'inner ring' sections than the other numbers (4/12). Do not accept vague answers such as "there are more of them", unless the 'them' is defined.

Page 8

1. 5 explanation which implies that 5 has more 'inner ring' sections than the other numbers. Do not accept vague answers such as "there are more of them".
2. explanation which implies that 1 has a 2 in 12 chance as does 4. Do not accept vague answers such as "they are the same".

Page 9

1. An answer which recognises that the angle at the pivot of the arrow is half a turn (180°) on both spinners. Eg "it is half a turn of the spinner on both".
2. $\frac{1}{4}$ or 0.25
3. $\frac{1}{4}$ or 0.25
4. $\frac{1}{2}$ or 0.5

Page 10

1. false
2. false
3. true
4. true
5. true

Answers cont.

Page 11

1. $\frac{2}{6}$ or $\frac{1}{3}$ or 0.33 2. $\frac{1}{6}$ or 0.167 3. $\frac{3}{6}$ or $\frac{1}{2}$ or 0.5
4. $\frac{4}{6}$ or $\frac{2}{3}$ or 0.67

Page 12

1. $\frac{3}{10}$ or 0.3 2. $\frac{1}{10}$ or 0.1 3. $\frac{4}{10}$ or $\frac{2}{5}$ or 0.4
4. $\frac{8}{10}$ or $\frac{4}{5}$ or 0.8