Probability scale - Worksheet

Skill

Group A - Probability scale

Place the following events on the probability scale:

1) The probability of a spinner landing on:

A. Red = $\frac{1}{6}$

B. Blue = $\frac{2}{6}$

C. Green = $\frac{3}{6}$

2) The probability of a spinner landing on:

A. Red = $\frac{4}{6}$

B. Blue = $\frac{1}{6}$

C. Green = 0

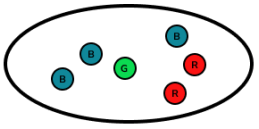
3) The probability of a spinner landing on:

A. Red = $\frac{2}{6}$

B. Blue = $\frac{3}{6}$

C. Green = $\frac{1}{6}$

4) The probability of selecting a ___ counter:

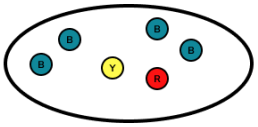


A. Red

B. Blue

C. Green

5) The probability of selecting a ___ counter:

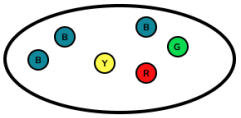


A. Red

B. Blue or Yellow

C. Black

6) The probability of selecting a ___ counter:



A. Red

B. Blue

C. Green or Blue

7) The probability of a spinner landing on:

A. Red = 0.1

B. Blue = 0.5

C. Green = 0.4

8) The probability of a spinner landing on:

A. Red = 0.3

B. Blue = 0.4

C. Green = 0.2

Probability scale - Worksheet

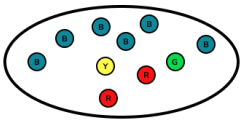
9) The probability of a spinner landing on:

A. Red = 0.3

B. Blue = 0.7

C. Green = 0

10) The probability of selecting a ___ counter:

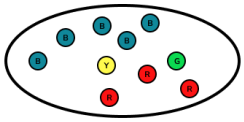


A. Red

B. Blue

C. Green

11) The probability of selecting a ___ counter:

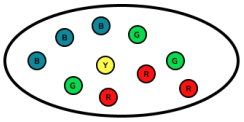


A. Red

B. Blue

C. Green

12) The probability of selecting a ___ counter:



A. Red

B. Blue or Green

C. Yellow

Group B - Calculating probability of events happening

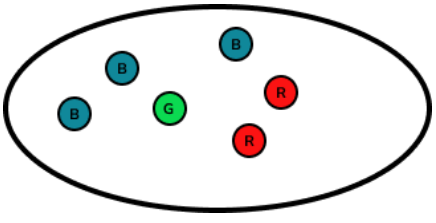
Calculate the following probabilities:

1) A fair six sided dice is rolled. What is the probability of the dice landing on a 5?

2) A fair six sided dice is rolled. What is the probability of the dice landing on a 5 or a 6?

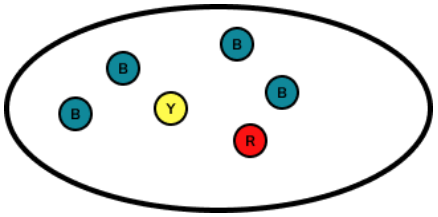
3) A fair six sided dice is rolled. What is the probability of the dice landing on an odd number?

4) What is the probability of picking a green counter?

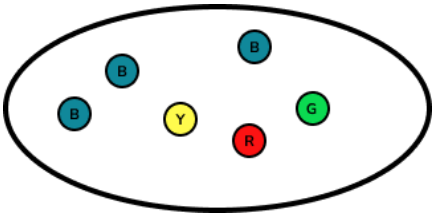


Probability scale - Worksheet

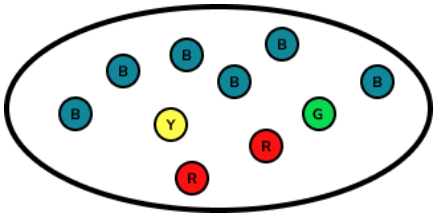
5) What is the probability of picking a green counter?



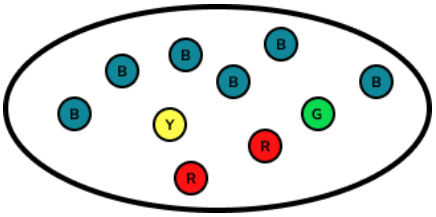
6) What is the probability of picking a green or a blue counter?



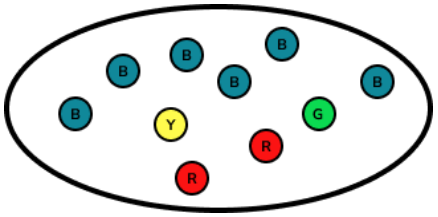
7) What is the probability of picking a green counter?



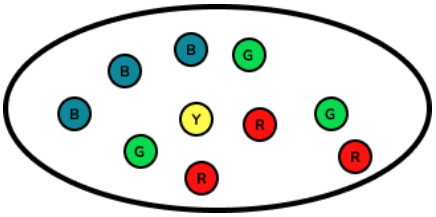
8) What is the probability of picking a blue counter?



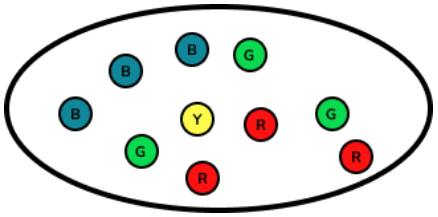
9) What is the probability of picking a blue or green counter?



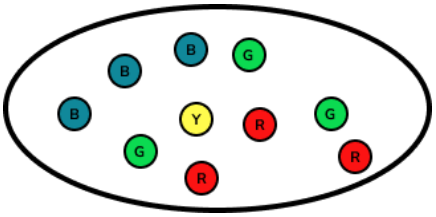
10) What is the probability of picking a green counter?



11) What is the probability of picking a black counter?



12) What is the probability of picking a yellow or red counter?



Probability scale - Worksheet

Group C - Calculating probability of events not happening

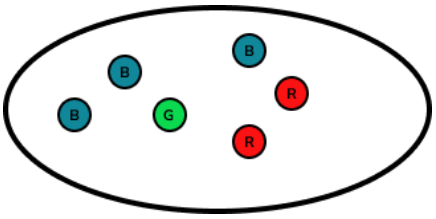
Calculate the following probabilities:

1) A fair six sided dice is rolled. What is the probability of the dice not landing on a 5?

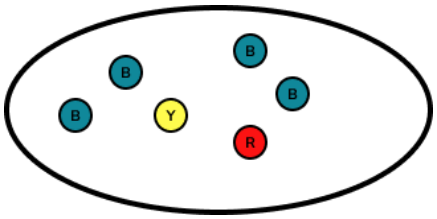
2) A fair six sided dice is rolled. What is the probability of the dice not landing on a 5 or a 6?

3) A fair six sided dice is rolled. What is the probability of the dice not landing on an odd number?

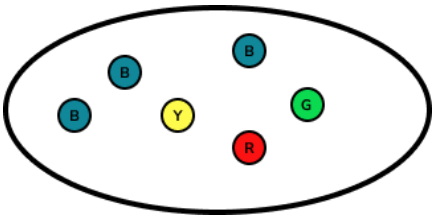
4) What is the probability of not picking a green counter?



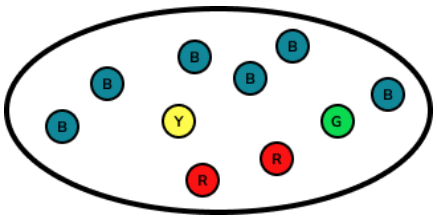
5) What is the probability of not picking a green counter?



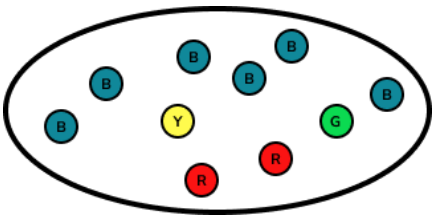
6) What is the probability of not picking a green or a blue counter?



7) What is the probability of not picking a green counter?

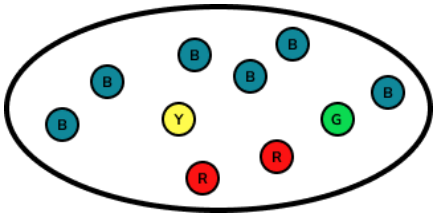


8) What is the probability of not picking a blue counter?

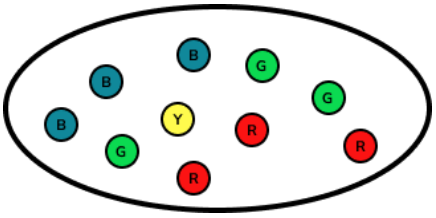


Probability scale - Worksheet

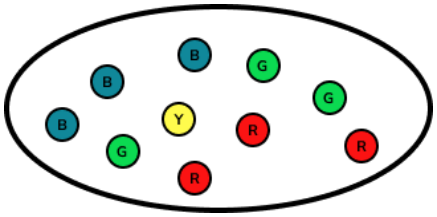
9) What is the probability of not picking a blue or green counter?



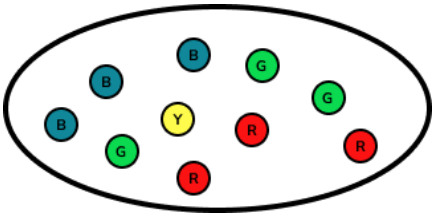
10) What is the probability of not picking a green counter?



11) What is the probability of not picking a black counter?



12) What is the probability of not picking a yellow or red counter?



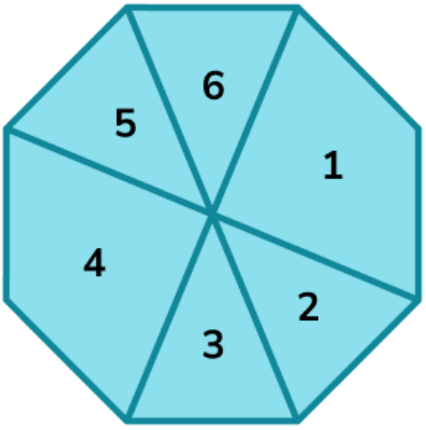
Probability scale - Worksheet

Applied

1) **(a)** John has a bag of beads. The probability of picking a pink bead is $\frac{1}{3}$. He has 15 pink beads. How many beads are there altogether in the bag?

(b) The rest of the counters in the bag are blue or purple. 6 are blue. What is the probability of picking a purple bead?

2) Karen is playing a game which uses this spinner.



(a) Karen says there are six sections so the chance that the spinner will land on 1 is $\frac{1}{6}$. She is wrong. Explain why.

(b) The spinner is a regular octagon. What is the probability of the spinner landing on 1?

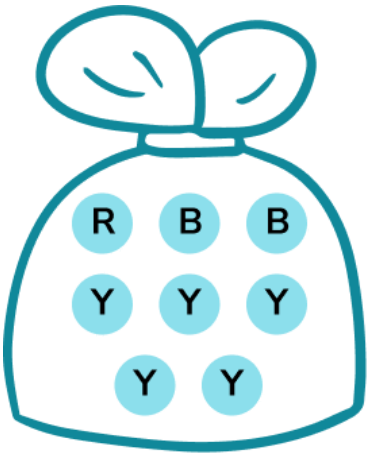
3) **(a)** In a bag of 10 counters, 8 of the counters are yellow. Gary adds 4 more yellow counters. He says the probability of now picking a yellow counter is 1.2 because there are now 12 yellow counters and there were 10 altogether. Why do you know his answer is wrong?

(b) If he only added the four yellow counters. What is the probability that he does not pick a yellow counter now?

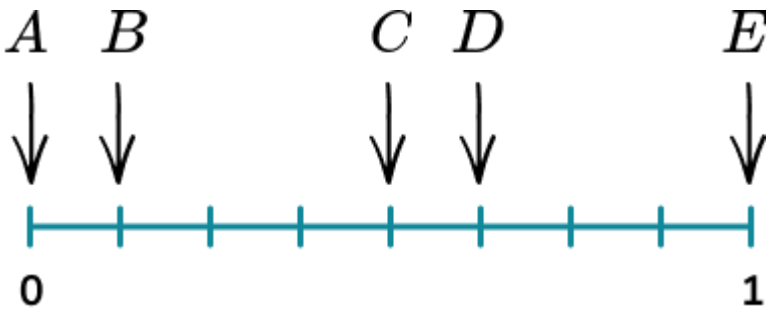
Probability scale - Exam Questions

1) A bag contains 8 counters.

1 of the counters is red, 2 are blue and the rest are yellow.



The diagram shows a probability scale.



Which arrow shows the probability of

(a) Picking a red counter

.....

(1)

(b) Picking a yellow counter

.....

(1)

(c) Picking a green counter

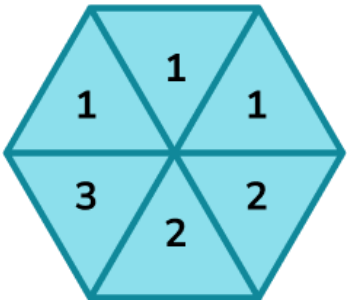
.....

(1)

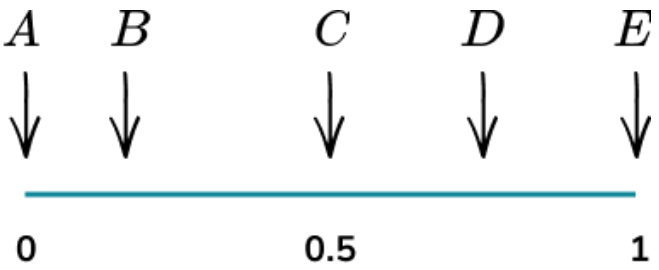
(3 marks)

Probability scale - Exam Questions

2) A fair spinner has six sides.
They are labelled
1, 1, 1, 2, 2, 3.



The diagram shows a probability scale.



Which arrow shows the probability of

(a) Scoring a 3

.....

(1)

(b) Scoring a number greater than 1

.....

(1)

(c) Scoring a number less than 4

.....

(1)

(3 marks)

Probability scale - Exam Questions

3) **(a)** Sandy has three coats. Each day she wears a coat. The table shows the probability that Sandy wears a coat of a particular colour.

Coat	Red	Blue	Black
Probability	0.2	0.35	

Work out the probability that she wears a black coat.

.....

(2)

(b) Work out the probability that she wears a red or a black coat.

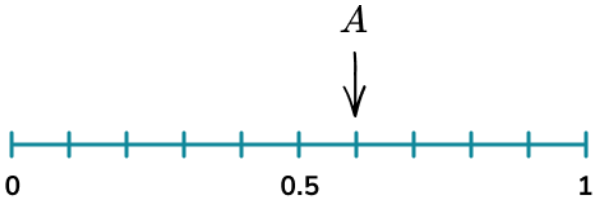
.....

(2)

(4 marks)

---

4) **(a)** A fair spinner has five sections. The sections are labelled **A**, **B** or **C.** The diagram shows a probability scale.



The scale shows the probability that the spinner will land on **A.**
How many of the five sections are labelled **A**?

.....sections

(3)

(b) The probability of spinning an **A** is three times the probability of spinning a **C**. The spinner is spun 100 times.

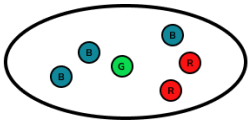
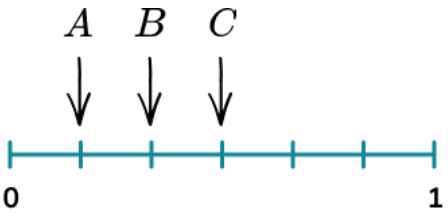
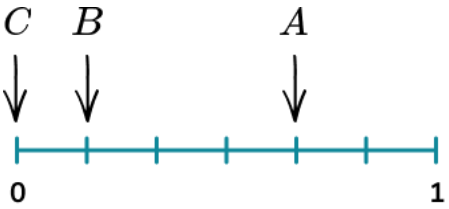
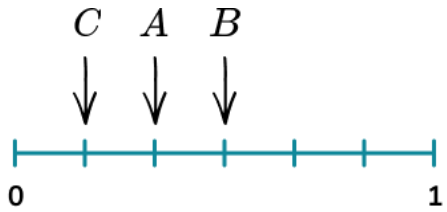
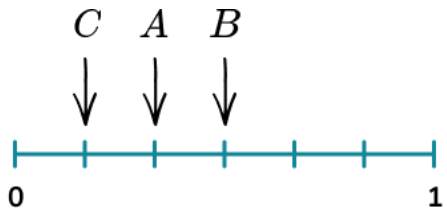
Calculate many times would you expect it to land on a **C**?

.....

(3)

(6 marks)

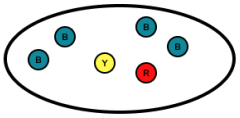
Probability scale - Answers

	Question	Answer
	Skill Questions	
Group A	Place the following events on the probability scale. **1)** The probability of a spinner landing on: A. Red = $\frac{1}{6}$ B. Blue = $\frac{2}{6}$ C. Green = $\frac{3}{6}$  **2)** The probability of a spinner landing on: A. Red = $\frac{4}{6}$ B. Blue = $\frac{1}{6}$ C. Green = 0  **3)** The probability of a spinner landing on: A. Red = $\frac{2}{6}$ B. Blue = $\frac{3}{6}$ C. Green = $\frac{1}{6}$  **4)** The probability of selecting a ___ counter:  A. Red B. Blue C. Green  	**1)**  **2)**  **3)**  **4)** 

Probability scale - Answers

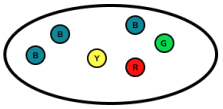
Group A contd

5) The probability of selecting a ___ counter:



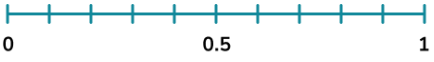
A. Red
B. Blue or Yellow
C. Black

6) The probability of selecting a ___ counter:

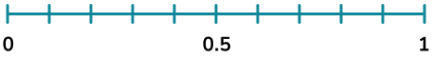


A. Red
B. Blue
C. Green or Blue

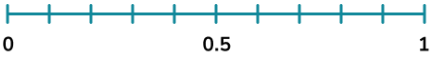
7) The probability of a spinner landing on:
A. Red = 0.1
B. Blue = 0.5
C. Green = 0.4



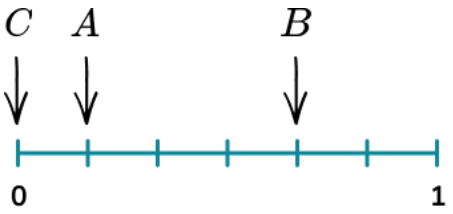
8) The probability of a spinner landing on:
A. Red = 0.3
B. Blue = 0.4
C. Green = 0.2



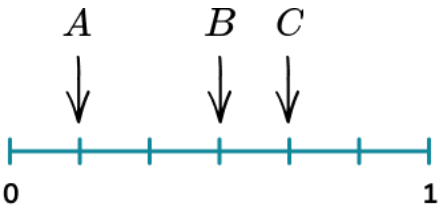
9) The probability of a spinner landing on:
A. Red = 0.3
B. Blue = 0.7
C. Green = 0



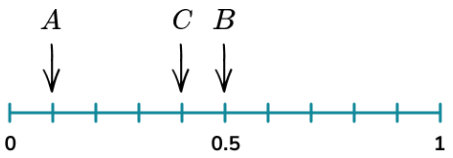
5)



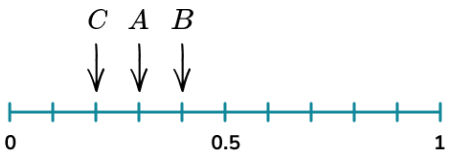
6)



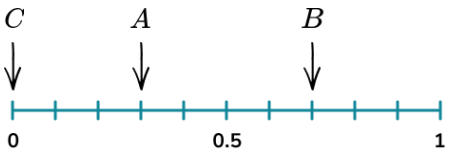
7)



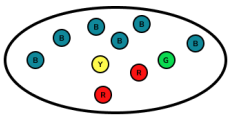
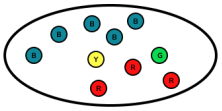
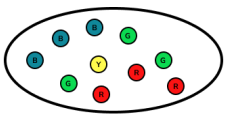
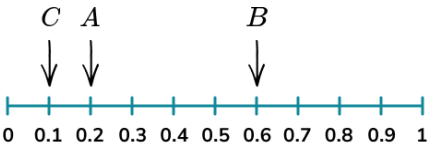
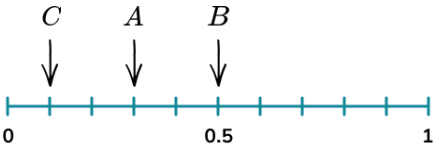
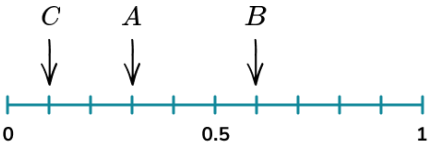
8)



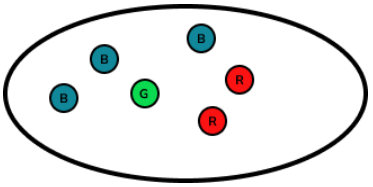
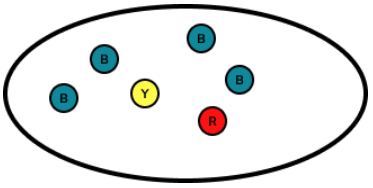
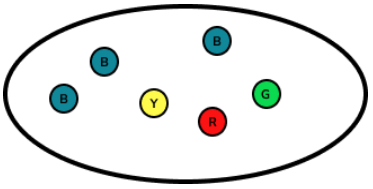
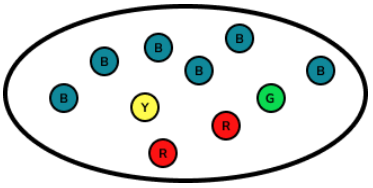
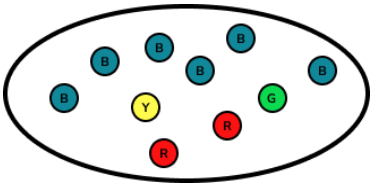
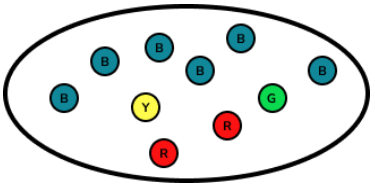
9)



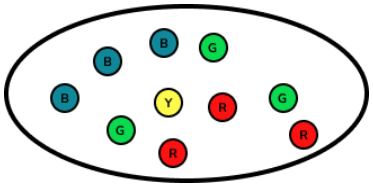
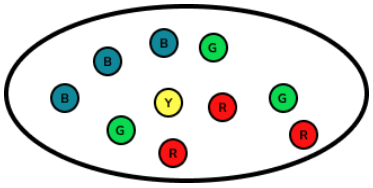
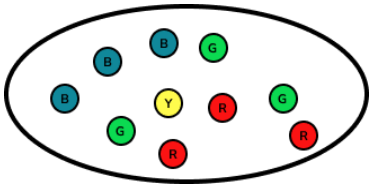
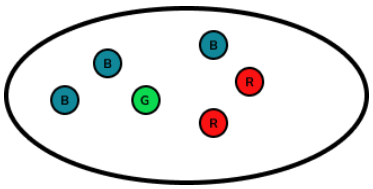
Probability scale - Answers

Group A contd	**10)** The probability of selecting a ___ counter:  A. Red B. Blue C. Green  **11)** The probability of selecting a ___ counter:  A. Red B. Blue C. Green  **12)** The probability of selecting a ___ counter:  A. Red B. Blue or Green C. Yellow  	**10)**  **11)**  **12)** 
Group B	Calculate the following probabilities: **1)** A fair six sided dice is rolled. What is the probability of the dice landing on a 5? **2)** A fair six sided dice is rolled. What is the probability of the dice landing on a 5 or a 6? **3)** A fair six sided dice is rolled. What is the probability of the dice landing on an odd number?	**1)** $\frac{1}{6}$ **2)** $\frac{2}{6} = \frac{1}{3}$ **3)** $\frac{3}{6} = \frac{1}{2}$

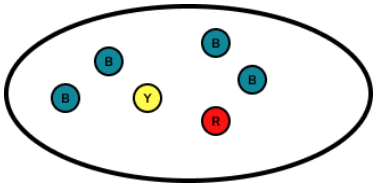
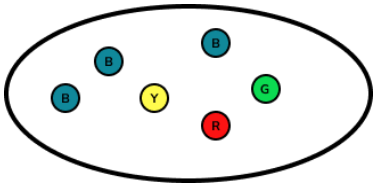
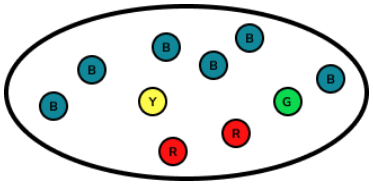
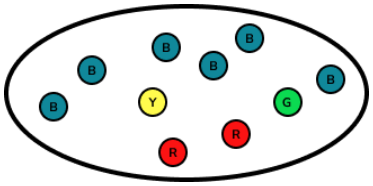
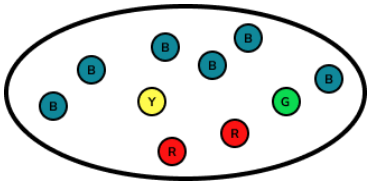
Probability scale - Answers

Group B contd	**4)** What is the probability of picking a green counter? 	**4)** $\frac{1}{6}$
	5) What is the probability of picking a green counter? 	**5)** 0
	6) What is the probability of picking a green or a blue counter? 	**6)** $\frac{4}{6} = \frac{2}{3}$
	7) What is the probability of picking a green counter? 	**7)** 0.1
	8) What is the probability of picking a blue counter? 	**8)** 0.6
	9) What is the probability of picking a blue or green counter? 	**9)** 0.7

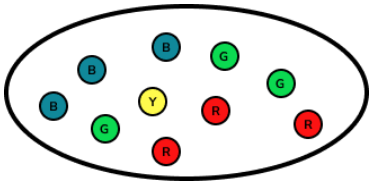
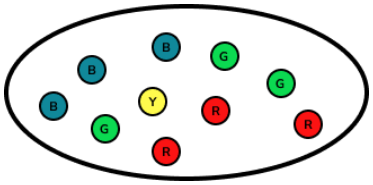
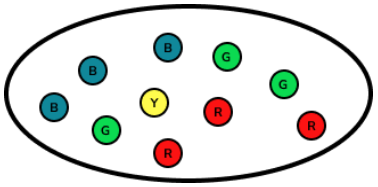
Probability scale - Answers

Group B contd	**10)** What is the probability of picking a green counter?  **11)** What is the probability of picking a black counter?  **12)** What is the probability of picking a yellow or red counter?  	**10)** 0.3 **11)** 0 **12)** 0.4
Group C	Calculate the probabilities: **1)** A fair six sided dice is rolled. What is the probability of the dice not landing on a 5? **2)** A fair six sided dice is rolled. What is the probability of the dice **not** landing on a 5 or a 6? **3)** A fair six sided dice is rolled. What is the probability of the dice **not** landing on an odd number? **4)** What is the probability of **not** picking a green counter?  	**1)** $\frac{5}{6}$ **2)** $\frac{4}{6} = \frac{2}{3}$ **3)** $\frac{3}{6} = \frac{1}{2}$ **4)** $\frac{5}{6}$

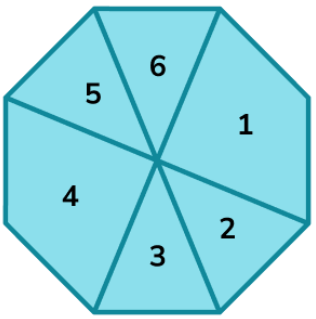
Probability scale - Answers

Group C contd	**5)** What is the probability of **not** picking a green counter? 	**5)** 1
	6) What is the probability of **not** picking a green or a blue counter? 	**6)** $\frac{2}{6} = \frac{1}{3}$
	7) What is the probability of **not** picking a green counter? 	**7)** 0.9
	8) What is the probability of **not** picking a blue counter? 	**8)** 0.4
	9) What is the probability of **not** picking a blue or green counter? 	**9)** 0.3

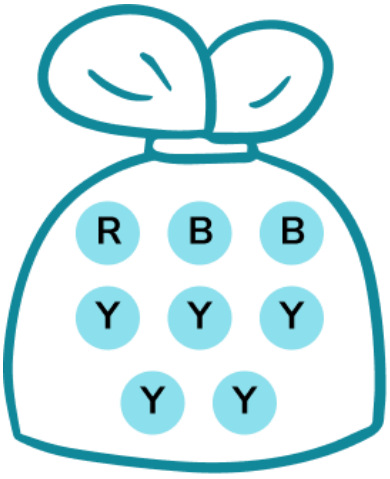
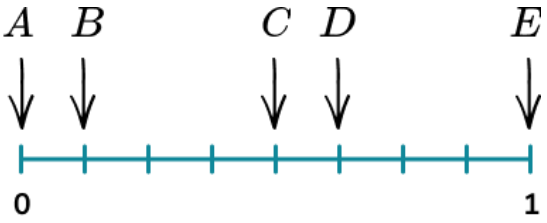
Probability scale - Answers

Group C	**10)** What is the probability of **not** picking a green counter?  **11)** What is the probability of **not** picking a black counter?  **12)** What is the probability of **not** picking a yellow or red counter?  	**10)** 0.7 **11)** 1 **12)** 0.6

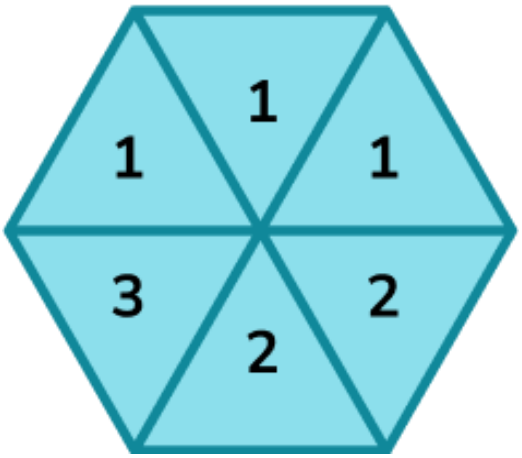
Probability scale - Answers

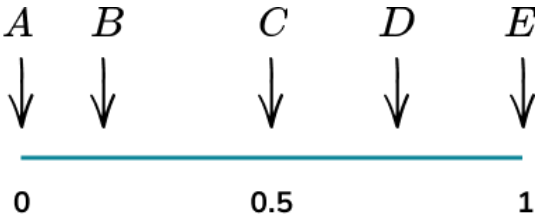
	Question	Answer
	Applied Questions	
1)	**a)** John has a bag of beads. The probability of picking a pink bead is $\frac{1}{3}$. He has 15 pink beads. How many beads are there altogether in the bag?	**a)** 45
	b) The rest of the counters in the bag are blue or purple. 6 are blue. What is the probability of picking a purple bead?	**b)** $45 - 15 - 6 = 24$ There are 24 purple beads $\frac{24}{45} = \frac{8}{15}$
2)	**a)** Karen is playing a game which uses this spinner.  Karen says there are six sections so the chance that the spinner will land on 1 is $\frac{1}{6}$. She is wrong. Explain why.	**a)** The sections are not equal in size.
	b) The spinner is a regular octagon. What is the probability of the spinner landing on 1?	**b)** $\frac{2}{8} = \frac{1}{4}$
3)	**a)** In a bag of 10 counters, 8 of the counters are yellow. Gary adds 4 more yellow counters. He says the probability of now picking a yellow counter is 1.2 because there are now 12 yellow counters and there were 10 altogether. Why do you know his answer would be wrong?	**a)** You cannot have a probability greater than one.
	b) If he only added the four yellow counters. What is the probability that he does not pick a yellow counter now?	**b)** $\frac{2}{14} = \frac{1}{7}$

Probability scale - Mark Scheme

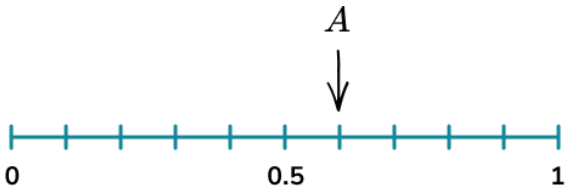
	Question	Answer	
	Exam Questions		
1)	A bag contains 8 counters.  1 of the counters is red, 2 are blue and the rest are yellow. The diagram shows a probability scale.  Which arrow shows the probability of		
(a)	Picking a red counter	**(a)** *B*	**(1)**
(b)	Picking a yellow counter	**(b)** *D*	**(1)**
(c)	Picking a green counter	**(c)** *A*	**(1)**

Probability scale - Mark Scheme

<table>
<tr><td>2)</td><td>A fair spinner has six sides.
They are labelled 1, 1, 1, 2, 2, 3.
 

The diagram shows a probability scale.
 
</td><td></td><td></td></tr>
<tr><td>(a)</td><td>Scoring a 3</td><td>(a) B</td><td>(1)</td></tr>
<tr><td>(b)</td><td>Scoring a number greater than 1</td><td>(b) C</td><td>(1)</td></tr>
<tr><td>(c)</td><td>Scoring a number less than 4</td><td>(c) E</td><td>(1)</td></tr>
<tr><td>3) (a)</td><td>Sandy has three coats.
Each day she wears a coat.
The table shows the probability that Sandy wears a coat of a particular colour.
<table><tr><td>Coat</td><td>Red</td><td>Blue</td><td>Black</td></tr><tr><td>Probability</td><td>0.2</td><td>0.35</td><td></td></tr></table>Work out the probability that she wears a black coat.</td><td>(a) $1 - (0.2 + 0.25)$
$= 0.45$</td><td>(1)
(1)</td></tr>
<tr><td>(b)</td><td>Work out the probability that she wears a red or a black coat.</td><td>(b) $0.2 + 0.45$
$= 0.65$</td><td>(1)
(1)</td></tr>
</table>

Probability scale - Mark Scheme

4) (a)	A fair spinner has five sections. The sections are labelled A, B or C. The diagram shows a probability scale.  The scale shows the probability that the spinner will land on A. How many of the five sections are labelled A?	**(a)** Probability of A is 0.6 0.6×5 $= 3$	**(1)** **(1)** **(1)**
(b)	The probability of spinning an **A** is three times the probability of spinning a **C**. The spinner is spun 100 times. Calculate many times would you expect it to land on a **C**?	**(b)** $3 \div 3 = 1$ yellow **or** $\frac{1}{5}$ yellow $\frac{1}{5} \times 100$ $= 20$	**(1)** **(1)** **(1)**