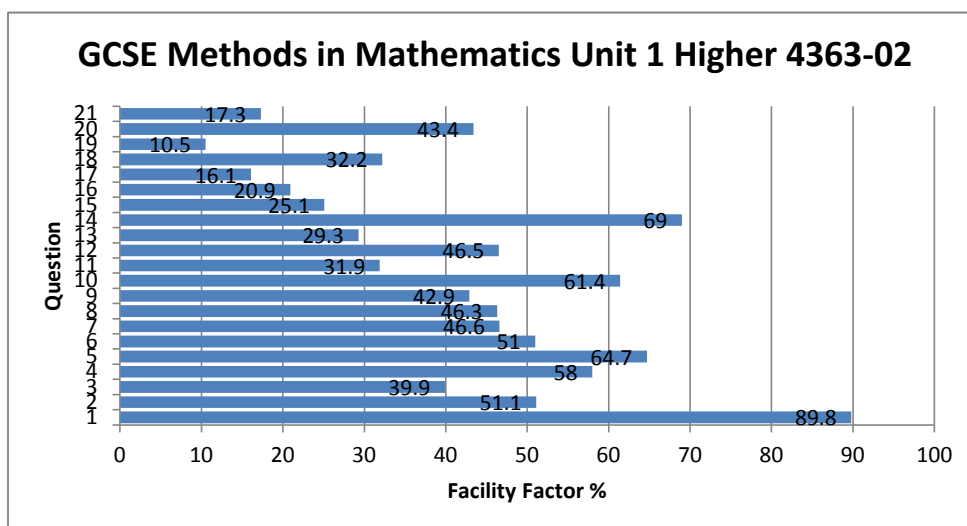


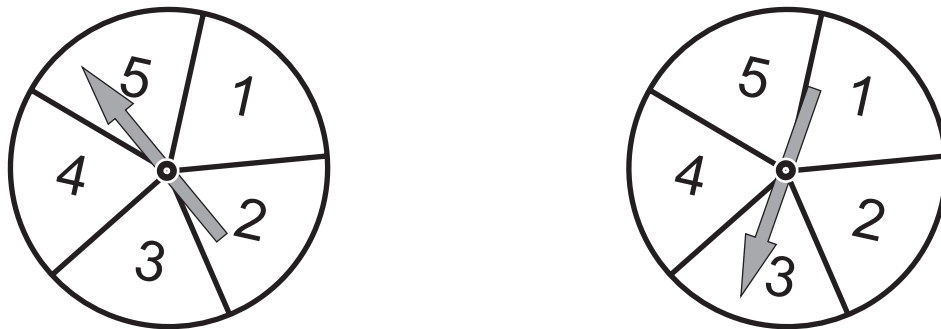
GCSE Methods in Mathematics Unit 1 Higher 4363-02

All Candidates' performance across questions

Question Title	N	Mean	SD	Max Mark	FF	Attempt %
1	379	4.5	0.8	5	89.8	99.7
2	372	3.1	2.1	6	51.1	97.9
3	379	2.8	1.8	7	39.9	99.7
4	379	2.3	1.3	4	58	99.7
5	380	3.2	1.6	5	64.7	100
6	378	2	1.4	4	51	99.5
7	361	1.9	1.6	4	46.6	95
8	365	1.4	1.2	3	46.3	96
9	374	2.6	1.9	6	42.9	98.4
10	378	4.9	2.7	8	61.4	99.5
11	367	1.3	1.4	4	31.9	96.6
12	358	2.8	2.1	6	46.5	94.2
13	363	0.6	0.7	2	29.3	95.5
14	379	2.8	1.1	4	69	99.7
15	376	0.8	0.9	3	25.1	99
16	351	0.8	1.2	4	20.9	92.4
17	363	0.6	1.4	4	16.1	95.5
18	372	1.6	1.2	5	32.2	97.9
19	250	0.6	1.1	6	10.5	65.8
20	354	3	2.8	7	43.4	93.2
21	320	0.5	1	3	17.3	84.2



2. You will be assessed on the quality of your written communication in this question.



The two spinners are spun.
The score is the total of the two numbers shown on the spinners.
The score shown above is eight.

There are two different game cards, card A and card B.
A game is played, crossing out the scores from the spinners on the game card as the spinners are spun repeatedly.
The first game card with all four scores crossed out is the winning card.

Game card A

3	2
9	10

Game card B

4	6
5	7

Which game card is more likely to be the winning card?
You must show your working and give a reason for your answer.

[6]

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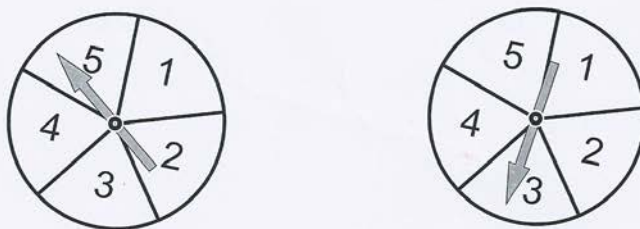
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2. You will be assessed on the quality of your written communication in this question.



The two spinners are spun.

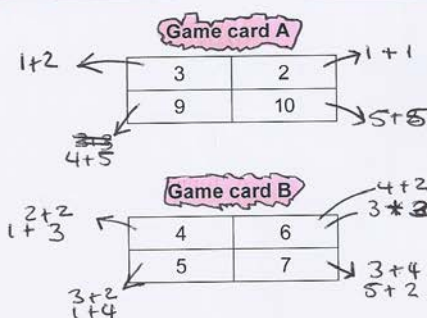
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The first game card with all four scores crossed out is the winning card.



Which game card is more likely to be the winning card?

You must show your workings and give a reason for your answer.

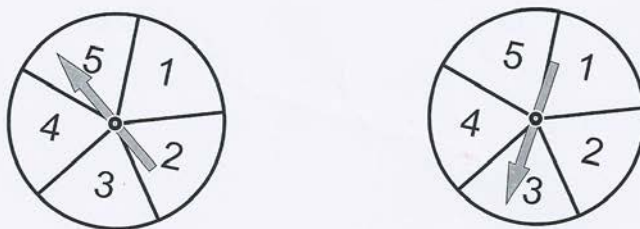
[6]

Game card B is more likely to be the winning card because the numbers that are on game card A (3, 2, 9, 10) only have 1 option, of numbers that will add up to make them, whereas Game

card B has 2 options
e.g. to get the number
6, you could have
either $4 + 2$ or $3 + 3$, and
if you need to get 10
on game card A, you
only have the option of $5 + 5$.

4363
00005

2. You will be assessed on the quality of your written communication in this question.



The two spinners are spun.

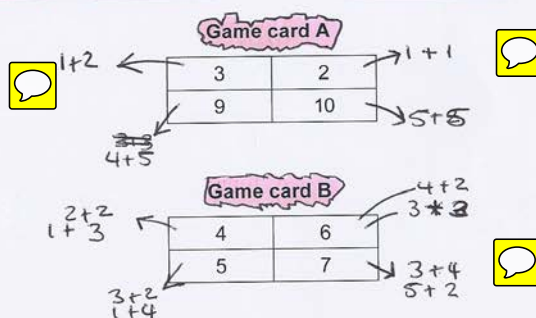
The score is the total of the two numbers shown on the spinners.

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The first game card with all four scores crossed out is the winning card.



Which game card is more likely to be the winning card?

You must show your workings and give a reason for your answer.

[6]

Game card B is more likely to be the winning card because the numbers that are on game card A (3, 2, 9, 10) only have 1 option, of numbers that will add up to make them, where as Game

card B has 2 options
e.g. to get the number
6, you could have
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00005

B2

E1

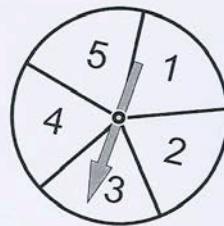
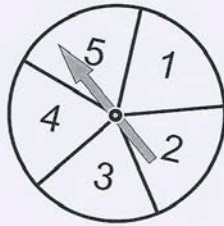
QWC

2

(5)

2. You will be assessed on the quality of your written communication in this question.

Examiner
only



The two spinners are spun.
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9	10

Game card B

4	6
5	7

Which game card is more likely to be the winning card?
You must show your working and give a reason for your answer.

[6]

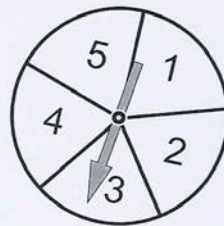
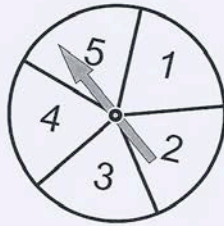
A → 2+1, 1+1, 5+4, 15+5
B (3+3), (4+2), (5+1), (2+2), (3+1)
(1+4), (3+2), (6+1), (5+2), (3+4)

Game card B is more likely to be the winning card as the numbers used here in card A have a probability of $\frac{2}{25}$ of getting one of the pairs

which equate the number
where as game card b has
also has $2/25$ but there is
a better chose of numbers for
it.

4363
020005

2. You will be assessed on the quality of your written communication in this question.



The two spinners are spun.
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[6]

A → 2+1, 1+1, 5+4, 15+5
 B → 3+3, 4+2, 5+1, 2+2, 3+1, 1+4, 3+2, 6+1, 5+2, 3+4

Game card B is more likely to be the winning card as the numbers used here in card A have a probability of $\frac{2}{25}$ of getting one of the pairs

which equate the number
where as game card b has
also has $2/25$ but there is
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E1

QWC

1
4383
020005

4

6. State whether the following statements are true or false.
You must give a reason for each of your answers.

(a) "All prime numbers have more than two factors."

[2]

True or False?

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(b) "All square numbers have an odd number of factors."

[2]

True or False?

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(b) "All square numbers have an odd number of factors."

[2]

True or False? false

If you square an odd number, the squared number would come out as an odd. Eg: number.

$$3^2 = 9$$

$$5^2 = 25$$

If you square an even number, the squared number would come out as an even number. Eg:

$$2^2 = 4$$

$$4^2 = 16$$

(b) "All square numbers have an odd number of factors."

[2]

True or False? false

If you square an odd number, the squared number would come out as an odd. Eg: number.

$$3^2 = 9$$

$$5^2 = 25$$

If you square an even number, the squared number would come out as an even number. Eg:

$$2^2 = 4$$

$$4^2 = 16$$



(b) "All square numbers have an odd number of factors."

[2]

True or False?

False

some do some dont.

$$16 = 1 \times 16, 2 \times 8, 4 \times 4$$

$$9 = 1 \times 9, 3 \times 3$$



(b) "All square numbers have an odd number of factors." [2]

True or False? False

some do some dont.

$16 = 1 \times 16, 2 \times 8, 4 \times 4$

$9 = 1 \times 9, 3 \times 3$



8.

*Diagram not drawn to scale*

ABC is a straight line, $AB:BC$ is $3:8$ and the length of $BC = 36$ cm.
Calculate the length of AC .

[3]

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8.



Diagram not drawn to scale

ABC is a straight line, $AB:BC$ is $3:8$ and the length of $BC = 36$ cm.
Calculate the length of AC .

[3]

$$\begin{array}{r} AB : BC \\ 3 : 8 \\ 36 : \end{array}$$

$$1 = 3.5$$

$$8 \overline{) 36.0}$$

$$3 \times 3.5 = 10.5$$

$$\text{length of } AC = 10.5 \text{ cm}$$

8.



Diagram not drawn to scale

ABC is a straight line, $AB:BC$ is $3:8$ and the length of $BC = 36$ cm.
Calculate the length of AC .

[3]

$$AB : BC$$

$$3 : 8$$

$$36 : 8$$

$$36 \div 8 = 4.5$$

$$\text{length of } AC = 10.5 \text{ cm}$$

$$1 = 3.5$$

$$8 \overline{) 36.0}$$

$$3 \times 3.5 = 10.5$$

SI

1

8.



Diagram not drawn to scale

ABC is a straight line, $AB:BC$ is $3:8$ and the length of $BC = 36$ cm.
Calculate the length of AC .

[3]

$$AC = 13.5 \text{ cm}$$

$$8 \overline{) 360} \quad 4.5$$

$$\frac{36}{8}$$

$$4.5 \times 3 = 13.5$$

8.



Diagram not drawn to scale

ABC is a straight line, $AB:BC$ is $3:8$ and the length of $BC = 36$ cm.
Calculate the length of AC .

[3]

$$AC = 13.5 \text{ cm}$$

$$\frac{36}{8} = 4.5$$

$$4.5 \times 3 = 13.5$$

SI
MO
AO