

Name: _____

GCSE Unit 10 Practice Assessment

Date:

Time: 65 minutes

Total marks available: 59

Total marks achieved: _____

Questions

Q1.

There are 20 sweets in a box.

x of the sweets are red.

The rest of the sweets are yellow.

Tom takes at random a sweet from the box.

Write down an expression, in terms of x , for the probability that Tom takes a yellow sweet.

.....
(Total for Question is 2 marks)

Q2.

Josh plays a game with two sets of cards.

Set A	1	2	4	5	7
Set B	3	6	8	9	

Josh takes at random one card from each set.
He adds the numbers on the two cards to get the total score.

(a) Complete the table to show all the possible total scores.

		Set A				
		1	2	4	5	7
Set B	3	4	5	7	8	10
	6	7	8	10		
	8					
	9					

(1)

(b) What is the probability that Josh's total score will be greater than 12?

.....
(2)

Josh's year group are raising money for a sponsored skydive.

60 students are each going to play Josh's card game once.
Each student pays 50p to play the game.

Josh pays £1.50 to any player getting a total of 8

(c) Show that Josh can expect to make a profit of £21 from his game.

(4)

(Total for Question is 7 marks)

Q3.

Ali throws a biased dice 200 times.

The table shows information about his results.

Score	Frequency
1	47
2	4
3	25
4	56
5	38
6	30

Charlie throws the dice 550 times.

Work out an estimate for the total number of times that Charlie will get a score of 4

.....

(Total for Question is 3 marks)

Q4.

There are only red counters, blue counters, white counters and black counters in a bag.

The table shows the probability that a counter taken at random from the bag will be red or blue.

Colour	red	blue	white	black
Probability	0.2	0.5		

The number of white counters in the bag is the same as the number of black counters in the bag.

Tania takes at random a counter from the bag.

(a) Work out the probability that Tania takes a white counter.

..... (2)

There are 240 counters in the bag.

(b) Work out the number of red counters in the bag.

..... (2)

(Total for Question is 4 marks)

Q5.

Jane has a packet of seeds.
The probability that a seed will grow is 0.75

(a) What is the probability that a seed will **not** grow?

..... (1)

Jane plants 200 of these seeds.

(b) Estimate the number of the seeds that will grow.

..... (2)
(Total for Question is 3 marks)

Q6.

Four friends each throw a biased coin a number of times.

The table shows the number of heads and the number of tails each friend got.

	Ben	Helen	Paul	Sharif
heads	34	66	80	120
tails	8	12	40	40

The coin is to be thrown one more time.

(a) Which of the four friends' results will give the best estimate for the probability that the coin will land heads?

Justify your answer.

.....

.....

.....

(1)

Paul says,

"With this coin you are twice as likely to get heads as to get tails."

(b) Is Paul correct?

Justify your answer.

.....

.....

.....

(2)

The coin is to be thrown twice.

(c) Use all the results in the table to work out an estimate for the probability that the coin will land heads both times.

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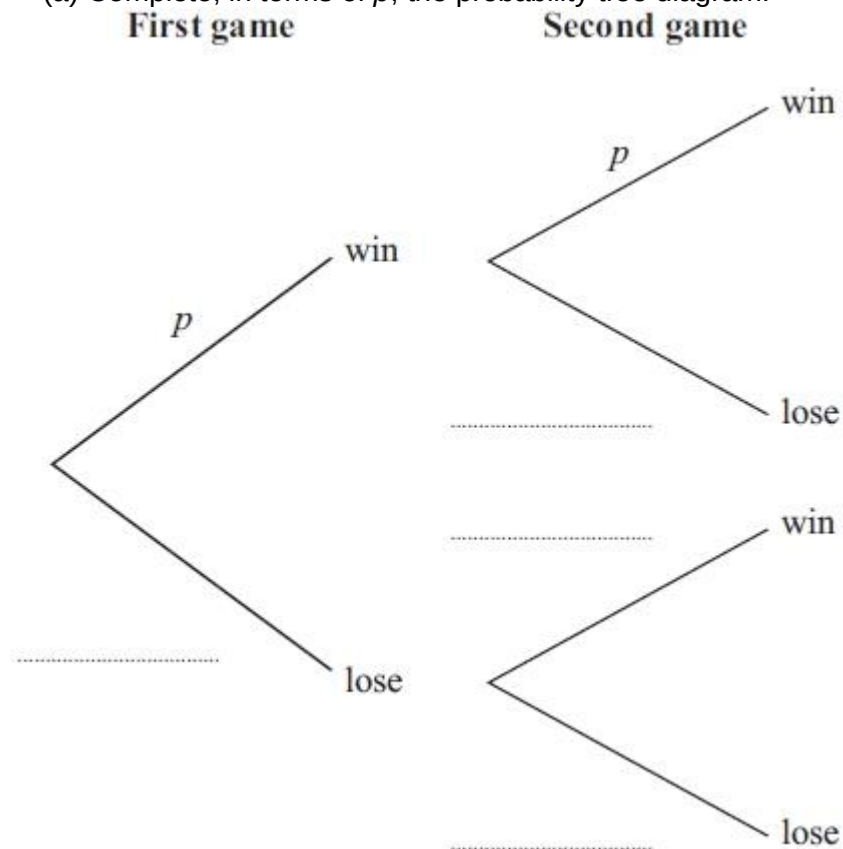
(2)

(Total for question is 5 marks)

Q7.

The probability that Rebecca will win any game of snooker is p .
She plays two games of snooker.

(a) Complete, in terms of p , the probability tree diagram.



(b) Write down an expression, in terms of p , for the probability that Rebecca will win both games. (2)

.....

(c) Write down an expression, in terms of p , for the probability that Rebecca will win exactly one of the games. (1)

.....

(2)
(Total for Question is 5 marks)

Q8.

Isobel plays a game against Eric.

Isobel is twice as likely as Eric to win the game.

The probability that the game is drawn is 0.1

(a) Work out the probability that Eric wins the game.

.....

(2)

Isobel and Eric play the game three times.

(b) Work out the probability that all three games are drawn.

.....

(2)

(c) Work out the probability that Eric wins at least one of the three games.

.....

(3)

(Total for Question is 7 marks)

Q9.

The probability that Sanay is late for school tomorrow is 0.05

The probability that Jaden is late for school tomorrow is 0.15

Alfie says that the probability that Sanay and Jaden will both be late for school tomorrow is 0.0075 because $0.05 \times 0.15 = 0.0075$

What assumption has Alfie made?

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.....

(Total for question = 1 mark)

Q10.

Lily and Anna take a test.

The probability that Lily will pass the test is 0.6

The probability that Anna will pass the test is 0.8

(a) Work out the probability that both of these girls fail the test.

.....

(3)

(b) Work out the probability that both of these girls pass the test or that both of these girls fail the test.

.....

(3)

(Total for Question is 6 marks)

Q11.

Thelma spins a biased coin twice.

The probability that it will come down heads both times is 0.09

Calculate the probability that it will come down tails both times.

.....
(Total for question is 3 marks)

Q12.

Fiza has 10 coins in a bag.

There are three £1 coins and seven 50 pence coins.

Fiza takes at random, 3 coins from the bag.

Work out the probability that she takes exactly £2.50

.....
(Total for Question is 4 marks)

Q13.

Sami asked 50 people which drinks they liked from tea, coffee and milk.

All 50 people like at least one of the drinks

19 people like all three drinks.

16 people like tea and coffee but do **not** like milk.

21 people like coffee and milk.

24 people like tea and milk.

40 people like coffee.

1 person likes only milk.

Sami selects at random one of the 50 people.

(a) Work out the probability that this person likes tea.

.....
(4)

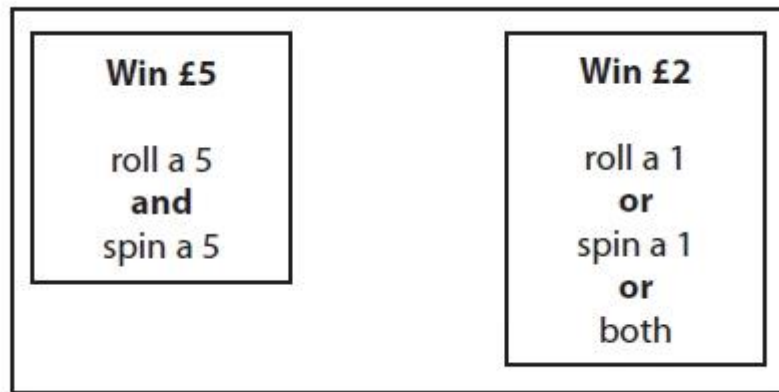
(b) Given that the person selected at random from the 50 people likes tea, find the probability that this person also likes exactly one other drink.

.....
(2)
(Total for question = 6 marks)

Q14.

David has designed a game.
He uses a fair 6-sided dice and a fair 5-sided spinner.
The dice is numbered 1 to 6
The spinner is numbered 1 to 5

Each player rolls the dice once and spins the spinner once.
A player can win £5 or win £2



David expects 30 people will play his game.
Each person will pay David £1 to play the game.

(a) Work out how much profit David can expect to make.

£

(4)

(b) Give a reason why David's actual profit may be different to the profit he expects to make.

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(1)

(Total for question = 5 marks)