

GCSE Grade 5

Maths

Booklet 6

Paper 1H
Non-Calculator

www.ggmaths.co.uk

- 1 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.

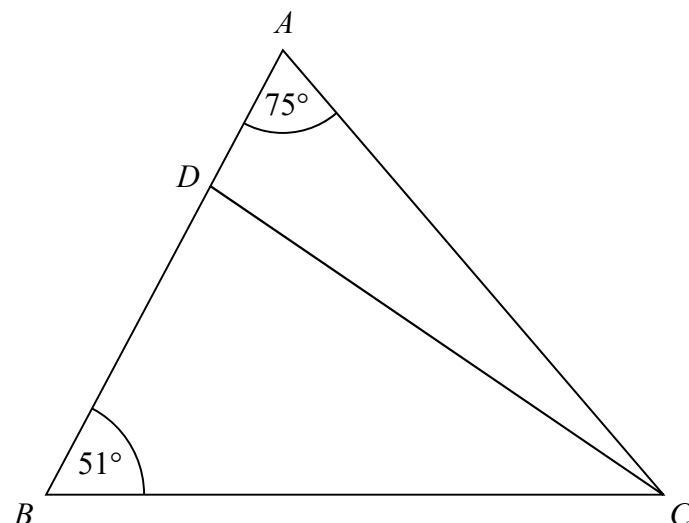
- (c) Use all the results in the table to work out an estimate for the probability that the coin will land heads both times.

(2)

(Total for Question 1 is 5 marks)



- 2 The diagram shows triangle ABC .



ADB is a straight line.

the size of angle DCB : the size of angle $ACD = 2 : 1$

Work out the size of angle BDC .

(Total for Question 2 is 4 marks)



- 3** 4 red bricks have a mean weight of 5 kg.
5 blue bricks have a mean weight of 9 kg.
1 green brick has a weight of 6 kg.

Donna says,

“The mean weight of the 10 bricks is less than 7 kg.”

Is Donna correct?

You must show how you get your answer.

(Total for Question 3 is 3 marks)



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

4 (a) Simplify $(p^2)^5$

.....
(1)

(b) Simplify $12x^7y^3 \div 6x^3y$

.....
(2)

(Total for Question 4 is 3 marks)



P 5 8 8 6 6 A 0 7 2 4

- 5 The accurate scale drawing shows the positions of port P and a lighthouse L .



Scale: 1 cm represents 4 km.

Aleena sails her boat from port P on a bearing of 070°

She sails for $1\frac{1}{2}$ hours at an average speed of 12 km/h to a port Q .

Find

- the distance, in km, of port Q from lighthouse L ,
- the bearing of port Q from lighthouse L .

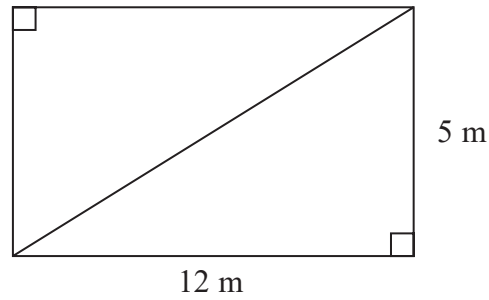
distance $QL = \dots\dots\dots$ km

bearing of Q from $L = \dots\dots\dots^\circ$

(Total for Question 5 is 5 marks)



- 6 This rectangular frame is made from 5 straight pieces of metal.



The weight of the metal is 1.5 kg per metre.

Work out the total weight of the metal in the frame.

..... kg

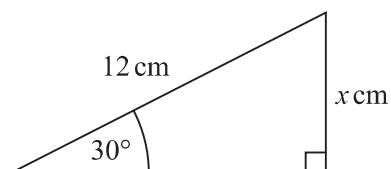
(Total for Question 6 is 5 marks)



7 (a) Write down the exact value of $\cos 30^\circ$

(1)

(b)



Given that $\sin 30^\circ = 0.5$,
work out the value of x .

(2)

(Total for Question 7 is 3 marks)



- 8 The equation of the line L_1 is $y = 3x - 2$
The equation of the line L_2 is $3y - 9x + 5 = 0$

Show that these two lines are parallel.

(Total for Question 8 is 2 marks)



- 9 There are 10 boys and 20 girls in a class.
The class has a test.

The mean mark for all the class is 60

The mean mark for the girls is 54

Work out the mean mark for the boys.

(Total for Question 9 is 3 marks)

- 10 (a) Write 7.97×10^{-6} as an ordinary number.

(1)

- (b) Work out the value of $(2.52 \times 10^5) \div (4 \times 10^{-3})$
Give your answer in standard form.

(2)

(Total for Question 10 is 3 marks)

