

General Certificate of Secondary Education

GCSE AQA Mathematics (Grade 9-1) Foundation Tier

Centre name				
Centre number				
Candidate number				

Practice Set 2 Paper 1: Non-calculator

Time allowed: 1 hour 30 minutes

Surname
Other names
Candidate signature

In addition to this paper you should have:

- A pen, pencil and eraser.
- A ruler.
- A protractor.
- A pair of compasses.

Calculators may **not** be used.



Instructions to candidates

- Write your name and other details in the spaces provided above.
- Answer all questions in the spaces provided.
- In calculations show clearly how you worked out your answers.

Information for candidates

- There are 80 marks available for this paper.
- The marks available are given in brackets at the end of each question.
- You may get marks for method, even if your answer is incorrect.

Advice to candidates

- Work steadily through the paper.
- Don't spend too long on one question.
- If you have time at the end, go back and check your answers.

For examiner's use			
Q	Mark	Q	Mark
1		13	
2		14	
3		15	
4		16	
5		17	
6		18	
7		19	
8		20	
9		21	
10		22	
11		23	
12		24	
Total			

Answer ALL the questions.

Write your answers in the spaces provided.

You must show all of your working.

1 Work out the following calculations. Circle your answers.

(a) $3789 + 7000$

9789

10 789

11 789

12 789

[1]

(b) 12^2

121

132

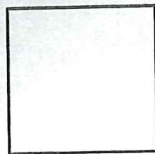
144

156

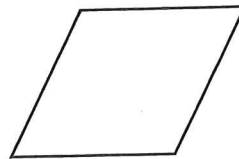
[1]

[Total 2 marks]

2 Two quadrilaterals are drawn below.



Square



Rhombus

(a) What is the order of rotational symmetry of a square? Circle your answer.

1

2

3

4

[1]

(b) How many lines of symmetry does a rhombus have? Circle your answer.

0

1

2

4

[1]

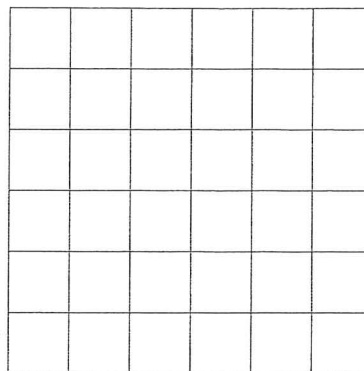
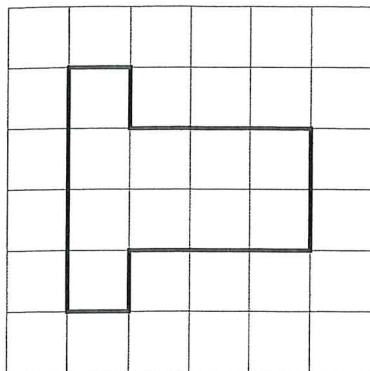
[Total 2 marks]

3 4 lollipops cost £2.
How much will 12 lollipops cost?

£

[Total 2 marks]

4 Rotate the shape below 90° anticlockwise. Draw your shape on the empty grid.



[Total 1 mark]

5 Convert the following lengths to metres:

(a) 23 km

..... m
[1]

(b) 6.7 cm

..... m
[1]

[Total 2 marks]

6 (a) Write down the next prime number after 31.

.....
[1]

(b) Find two factors of 60 that add up to 27.

..... and
[2]

[Total 3 marks]

7 (a) Simplify $3x + 3y + 5x + 6y$

Leave
blank

.....
[1]

(b) Simplify $a \times a \times a \times a$

.....
[1]

(c) Expand $4(x - 3)$

.....
[1]

[Total 3 marks]

8 Dexter is baking some cakes. He has one block of butter.

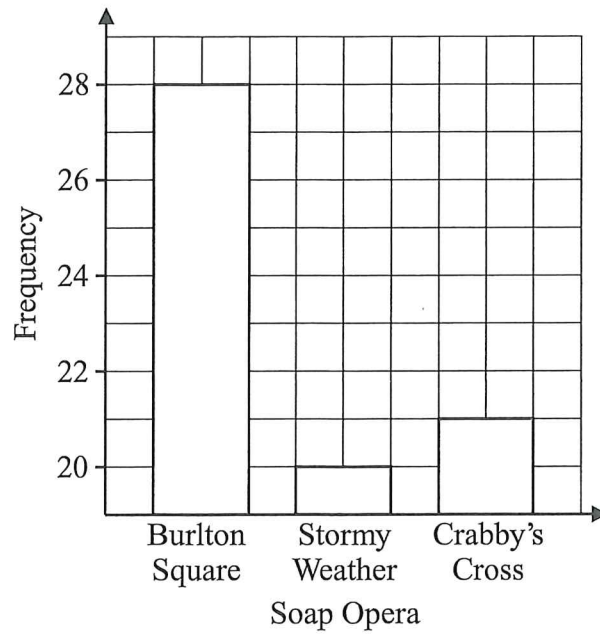
He uses $\frac{1}{3}$ of the butter in some cupcakes and $\frac{2}{5}$ of the butter in some muffins.

What fraction of the block does Dexter have left?

Give your answer as a fraction in its simplest form.

.....
[Total 3 marks]

- 9 69 people were asked what their favourite soap opera was. The results are shown in the bar chart below.



Explain how the bar chart could be misleading.

.....

.....

.....

.....

[Total 2 marks]

- 10 Florence runs a catering company. She wants to buy 310 meat pies from her local bakery. Each meat pie costs £3.09

She quickly estimates that she will need to take $300 \times £3 = £900$ to pay for the pies.

Without doing the calculation, how can you tell that she won't have enough money to buy all of the pies?

.....

.....

.....

[Total 2 marks]

- 11 Three teams (A, B and C) are competing in an obstacle course competition.
Team A scored 15 points and Team B scored 30 points.
The ratio of Team B's score to Team C's score is 6:7.

(a) How many more points did Team C score than Team A?

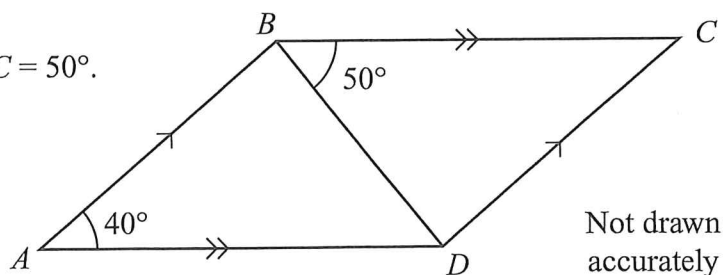
.....
[3]

(b) What fraction of all the points scored were scored by team B?
Give your answer in its simplest form.

.....
[2]

[Total 5 marks]

- 12 $ABCD$ is a parallelogram.
Angle $BAD = 40^\circ$ and angle $DBC = 50^\circ$.



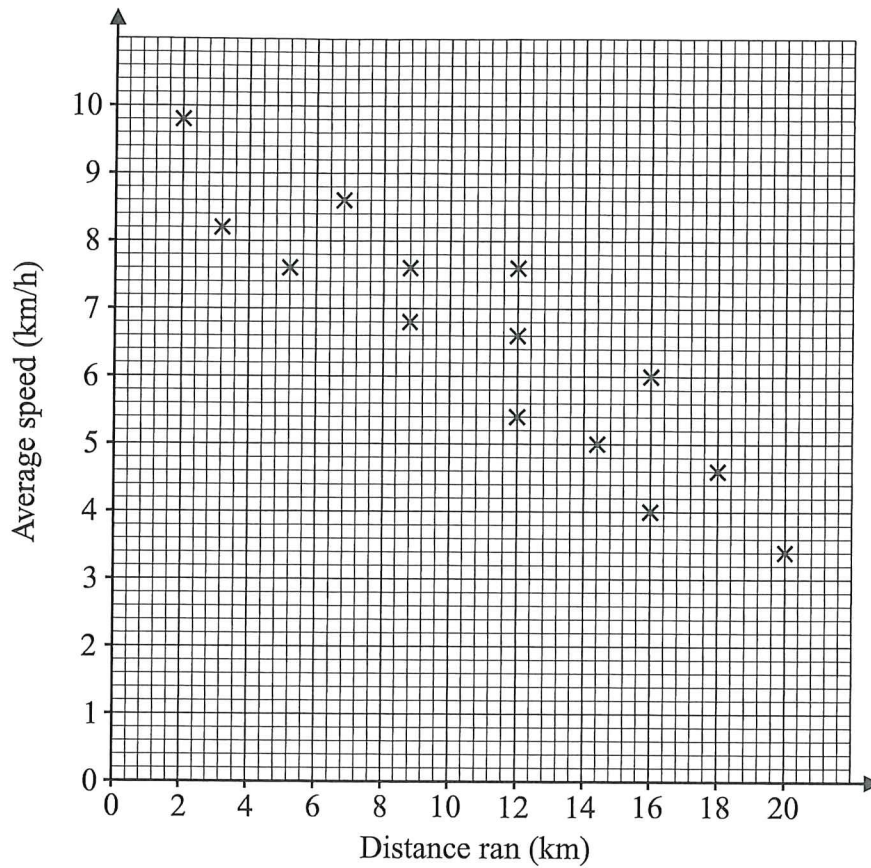
Not drawn
accurately

Show that triangle ABD is a right-angled triangle.
Give a reason for each stage of your working.

[Total 3 marks]

- 13 Over a month, Paula used a GPS tracker to record data about her runs. At the end of the month she generated a scatter graph showing 14 of her runs.

Leave blank



- (a) What sort of a correlation does the scatter graph show? Circle your answer.

Strong positive correlation

Weak positive correlation

Strong negative correlation

Weak negative correlation

[1]

- (b) By drawing a line of best fit, estimate Paula's average speed for a 10 km run.

..... km/h
[2]

- (c) Paula generated another scatter graph to plot the distance ran against the time taken for each of her runs.

What sort of correlation would this scatter graph show? Explain your answer.

.....

.....

.....

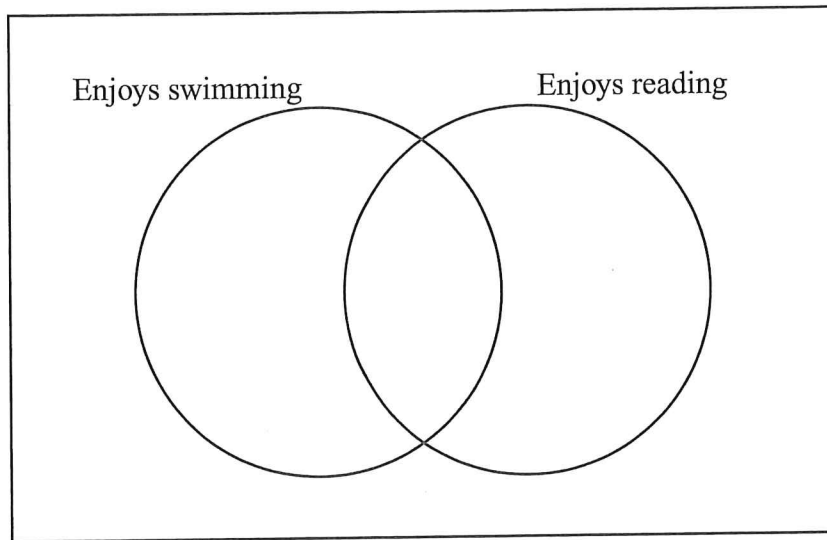
[2]

[Total 5 marks]

- 14 80 students were asked if they enjoy swimming and reading.
28 enjoy both, 46 enjoy swimming and 10 enjoy neither.

*Leave
blank*

- (a) Complete the Venn diagram showing how many students enjoy each activity.



[3]

- (b) What is the probability that a randomly selected student enjoys swimming but does not enjoy reading?
Give your answer as a fraction in its simplest form.

.....
[2]

[Total 5 marks]

15 (a) Increase 80 by 35%.

*Leave
blank*

.....
[2]

(b) Write 36 as a percentage of 75.

..... %
[2]

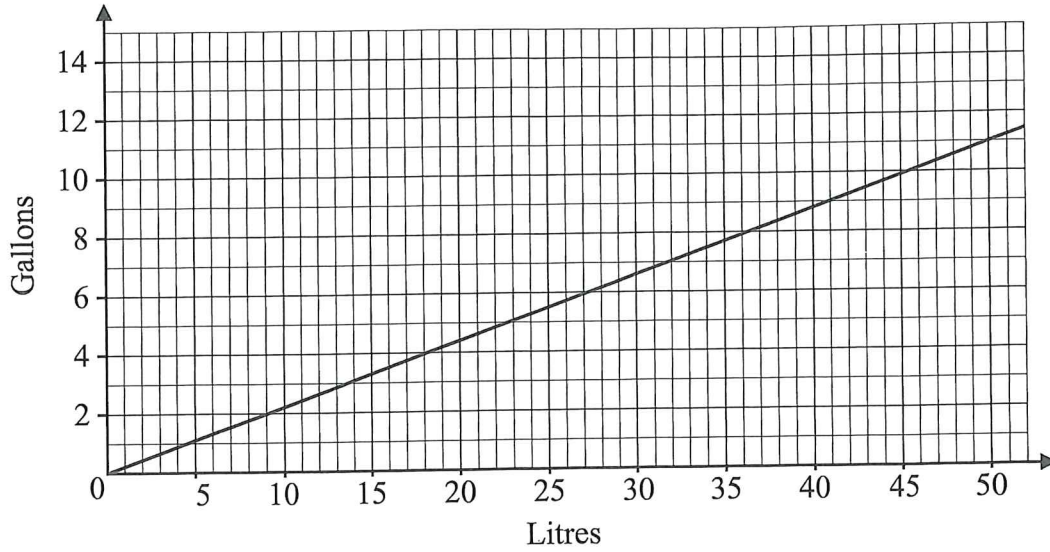
(c) At an auction, a table was bought for £56.
This was 20% below the table's actual value.
What was the table's actual value?

£
[2]

[Total 6 marks]

Leave
blank

16 The conversion graph below can be used to convert between gallons and litres.



(a) Use the conversion graph to estimate how many gallons are in 25 litres.

..... gallons
[1]

(b) A truck can hold 200 gallons of fuel.

Use the conversion graph to estimate how many litres of fuel a truck can hold.

..... litres
[2]

[Total 3 marks]

17 Work out $(1.5 \times 10^5) - (9 \times 10^4)$.
Give your answer in standard form.

.....
[Total 3 marks]

Leave
blank

18 Evaluate:

(a) 0.137×8

.....
[2]

(b) $114.3 \div 9$

.....
[2]

[Total 4 marks]

19 Jane thinks of a number, x , multiplies it by 7 and writes down the result.
Andrew also begins with x , then multiplies it by 5, adds 18 and writes down the result.
Given that Jane and Andrew write down the same result, work out the value of x .

$x =$

[Total 4 marks]

- 20 At 09:00, a leaky bucket is filled to the top with water.
Every minute, 20 ml of water drips out of the bucket.
At 12:00, the bucket is $\frac{1}{3}$ full.
What is the capacity of the bucket in litres?

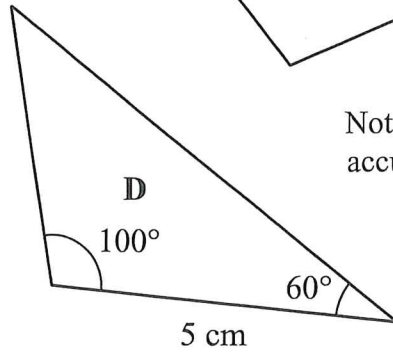
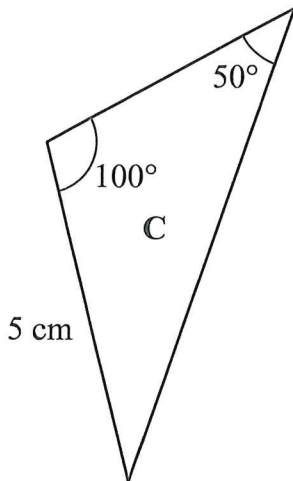
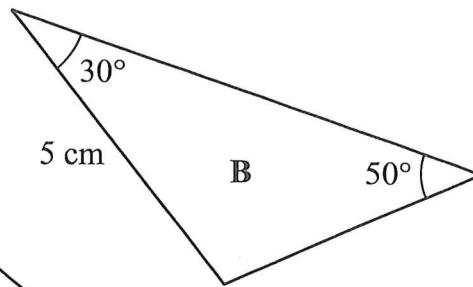
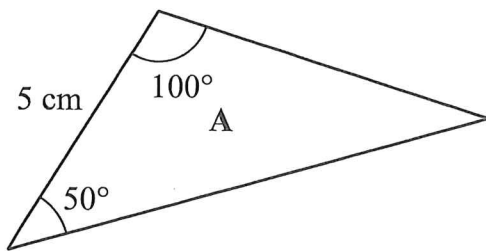
*Leave
blank*

..... litres

[Total 4 marks]

21 Four triangles are shown below.

Leave blank



Not drawn accurately

Tick the letters of the shapes that are congruent. Give reasons for your answer.

A

B

C

D

.....

.....

.....

.....

.....

.....

[Total 3 marks]

22 (a) What is the exact value of $\sin 30^\circ$? Circle your answer.

1

$\frac{1}{2}$

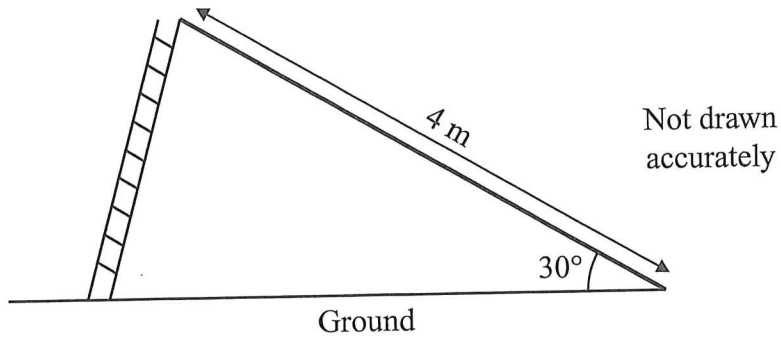
$\frac{\sqrt{3}}{2}$

$\frac{1}{\sqrt{2}}$

[1]

Leave blank

Jamila is building a slide. She wants the angle between the slide and the horizontal ground to be 30° . The slide itself is 4 m long.



(b) How high will the top of the slide be above the ground?
You must show all of your working.

..... m

[3]

[Total 4 marks]

23 Solve the simultaneous equations

$$4a + 3b = 13$$

$$8a + 8b = 30$$

*Leave
blank*

$a = \dots\dots\dots$

$b = \dots\dots\dots$

[Total 4 marks]

- 24 Alastair and Jadyne are making lemonade.
Alastair makes 4800 ml of lemonade and Jadyne makes 1680 ml of lemonade.
- (a) Express 4800 as a product of powers of its prime factors.

Leave
blank

..... ml
[3]

Alastair and Jadyne are filling identical plastic cups for a party.
They are both able to fill a whole number of cups with no lemonade left over.

- (b) Given that $1680 = 2^4 \times 3 \times 5 \times 7$,
what is the largest possible capacity of the cups?

..... ml
[2]

[Total 5 marks]

[TOTAL FOR PAPER = 80 MARKS]