AQA

2023 PRACTICE PAPER SET 2

Please write clearly, in block capitals.

Centre number | | | | | | Candidate number | | | | |

Surname _____

Forename(s) _____

Candidate signature _____

GCSE MATHEMATICS

F

Foundation Tier Paper 1 Non-Calculator

Time allowed: 1 hour 30 minutes

Materials

For this paper you must have:
- mathematical instruments

You must **not** use a calculator.

Instructions
- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information
- The marks for questions are shown in brackets.
- The maximum mark for this paper is 80.
- You may ask for more answer paper, graph paper and tracing paper. These must be tagged securely to this answer book.

Advice
- In all calculations, show clearly how you work out your answer.

For Examiner's Use	
Pages	Mark
2 - 3	
4 - 5	
6 - 7	
8 - 9	
10 - 11	
12 - 13	
14 - 15	
16 - 17	
18 - 19	
20 - 21	
22	
TOTAL	

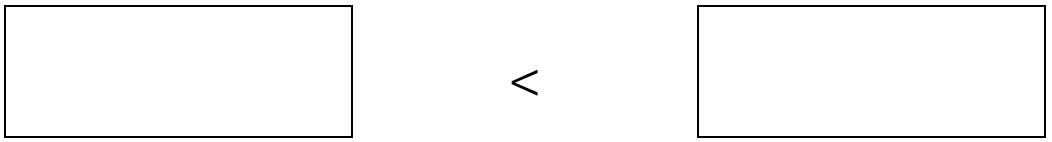
1 Write down **one** multiple of 6.

[1 mark]

Answer _____

2 Write a number in each box to make a correct statement.

[1 mark]



3 Solve $x - 3 = 9$

[1 mark]

_____

$x =$ _____

4 Simplify $y \times y$

[1 mark]

Answer _____

5 (a) Work out $\frac{1}{5}$ of 65

[2 marks]

Answer _____

5 (b) Work out $3.4 \div 2 + 4.8$

[2 marks]

Answer _____

6 Simplify $8a + 4b + 2a - 3b$

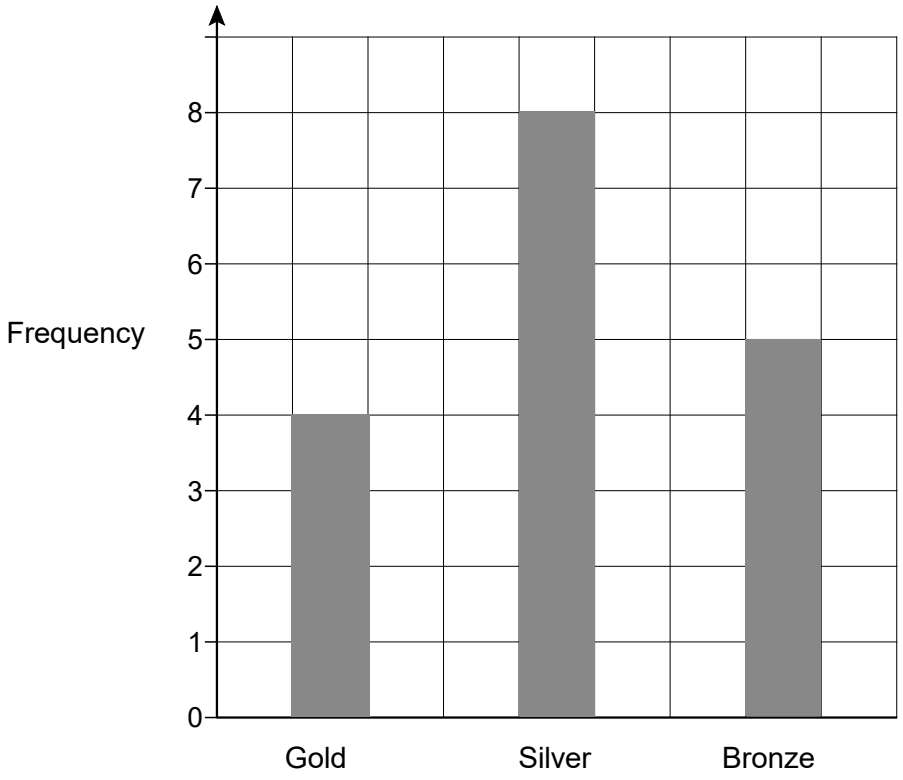
[2 marks]

Answer _____

Turn over for the next question

10

7 The bar chart shows information about the medals won by Kenya at the Commonwealth Games.



Show the information in a pictogram.

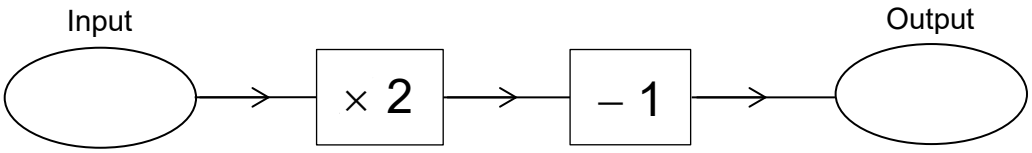
Use the key given.

[3 marks]

Key : ☐ represents 2 medals

Gold	
Silver	
Bronze	

8 Here is a number machine.



8 (a) Work out the **output** when the input is 5

[1 mark]

Answer _____

8 (b) Work out the **input** when the output is 19

[2 marks]

Answer _____

Turn over for the next question

6

9 (a) Work out $\frac{2}{7} + \frac{4}{7}$

[1 mark]

Answer _____

9 (b) Work out $\frac{3}{8} \div \frac{7}{10}$

[2 marks]

Answer _____

10 In a quiz, teams are asked 10 questions.

Teams score

2 points for a correct answer

0 points for questions not attempted

−1 point for an incorrect answer.

10 (a) Team A has these results:

	Correct	**Not attempted**	**Incorrect**
Number of questions	6	1	3

Work out the total number of points Team A scores.

[2 marks]

Answer _____

10 (b) Team B answers 8 out of 10 questions correctly.

Work out the percentage of questions Team B answers correctly.

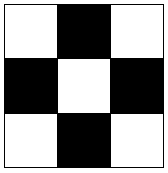
[1 mark]

Answer _____ %

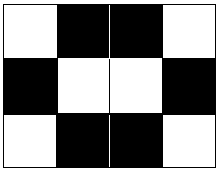
6

11 A sequence of patterns uses black squares and white squares.

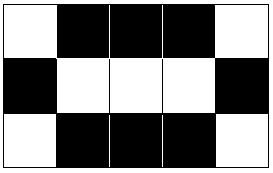
Here are the first three patterns.



Pattern 1



Pattern 2



Pattern 3

11 (a) How many black squares are in Pattern 4?

[1 mark]

Answer _____

11 (b) Circle the expression for the number of black squares in Pattern n

[1 mark]

$4n$ $\quad$ $n + 2$ $\quad$ $6n - 2$ $\quad$ $2n + 2$

11 (c) Will the number of black squares always be even?

Tick a box.

Yes ☐ $\quad$ No ☐

Give a reason for your answer.

[1 mark]

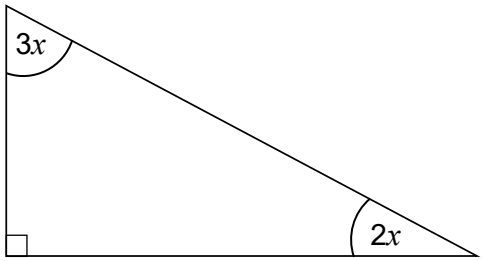
12 A bag contains red counters and blue counters in the ratio 1 : 2

What fraction of the counters are red?

[1 mark]

Answer _____

13



Not drawn accurately

Work out the value of x

[3 marks]

$x =$ _____ °

Turn over for the next question

7

14 90 drinks are to be provided for people attending a school fete.

A jug containing orange squash can fill 12 paper cups.

A jug containing coffee can fill 8 china cups.

63 people would like orange squash, while 27 people would prefer coffee.

What is the least number of jugs needed to provide everyone with their chosen drink?

[4 marks]

Answer _____

15 (a) The total of two square numbers is 100

What are the two square numbers?

[2 marks]

Answer _____ and _____

15 (b) Kim says,

"The total of any two **different** square numbers is **always** even."

Are they correct?

Yes ☐ No ☐

Write down a calculation to support your answer.

[1 mark]

16 Work out the value of $2(3x - 5y)$ when $x = 4$ and $y = -2$

[2 marks]

Answer _____

17 Factorise $15x + 5y$

[1 mark]

Answer _____

Turn over for the next question

10

18 Adrian changes his car every three years.
Brian changes his car every eight years.
Both changed their car in 2022.

18 (a) In which of these years did Adrian change his car?
Circle your answer.

[1 mark]

2009 2010 2011 2014

18 (b) When is the next year after 2022 that **both** Adrian and Brian change their cars?

[1 mark]

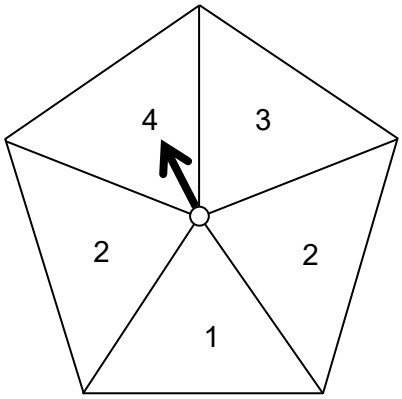
Answer _____

18 (c) In any leap year, the number made by the last two digits is divisible by four.
For example, 2004 and 2016 were leap years because 04 and 16 are divisible by four.

Give a reason why Brian will never change his car in a leap year.

[1 mark]

19 Here is a fair five sided spinner.



19 (a) Write down the probability of scoring an even number with one spin.

[1 mark]

Answer _____

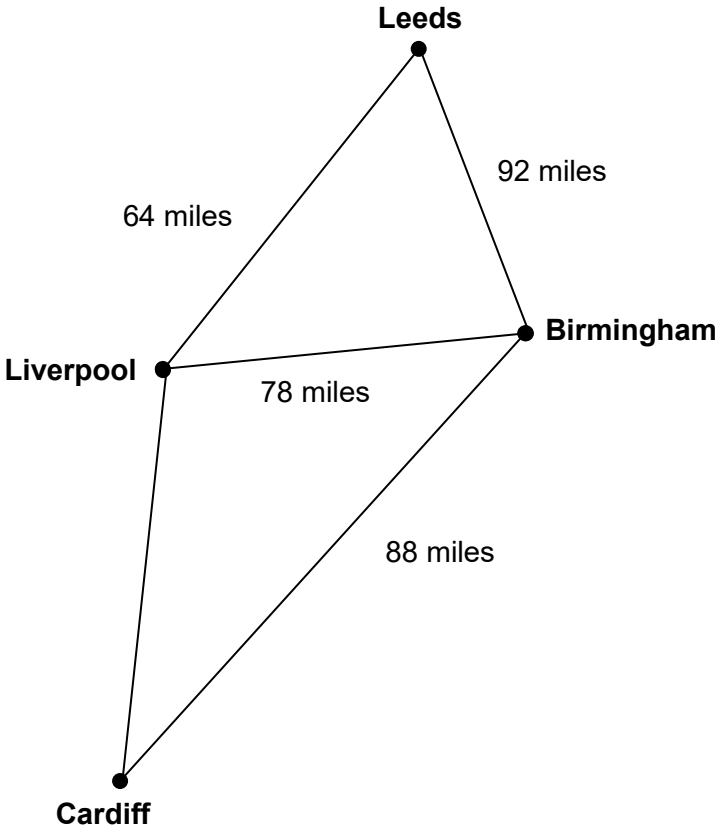
19 (b) Work out the probability of scoring a **total** of 8 with two spins.

[3 marks]

Answer _____

7

20 The diagram shows distances by road between four cities.



20 (a) Sam drives from Cardiff to Leeds via Birmingham.

Tim drives from Cardiff to Leeds via Liverpool.

Tim drives 18 more miles than Sam.

Work out the distance by road from Cardiff to Liverpool.

[3 marks]

Answer _____ miles

20 (b) Eve drove the 180 miles from Cardiff to Leeds.
She drove the first 125 miles at 50 mph then the remaining distance at 60mph.

Find the total time that Eve was driving.

[4 marks]

Answer _____

20 (c) If Eve drove the whole distance at 50 mph, how would this affect her journey time?

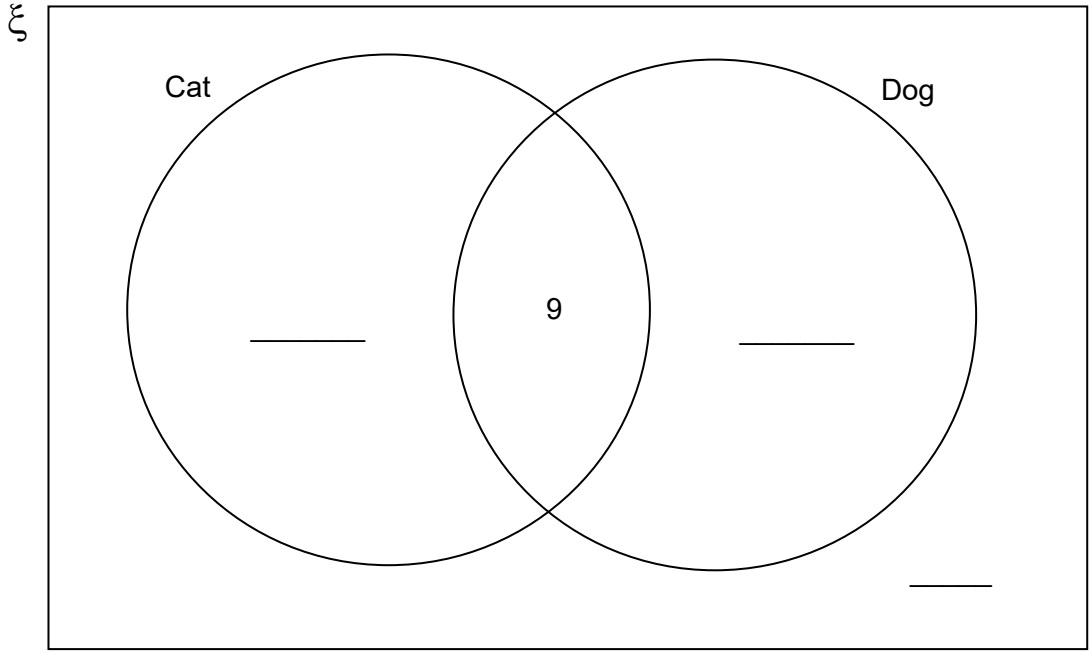
[1 mark]

Turn over for the next question

8

21 30 pupils are asked about their pets.

The Venn diagram shows some information about their answers.



21 (a) What does the number 9 on the diagram represent?

[1 mark]

21 (b) 16 pupils have a cat and 17 pupils have a dog.

Complete the Venn diagram.

[3 marks]

22 Brass is made by mixing 7 parts copper to 3 parts zinc.

22 (a) How much copper is needed to make 30 kg of brass?

[2 marks]

Answer _____ kg

22 (b) Fred has 35 kg of copper and 12 kg of zinc.

What is the greatest amount of brass he can make?

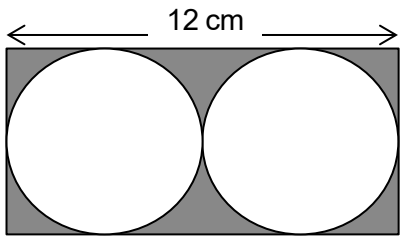
[3 marks]

Answer _____ kg

Turn over for the next question

9

23 Two identical circles just fit inside a rectangle as shown.



Not drawn accurately

Work out the area of the shaded section.

Give your answer in terms of π

[4 marks]

Answer _____ cm^2

24 Bag A contains 20 green balls and 12 yellow balls.

Bag B contains 15 green balls and 9 yellow balls.

John says,

> "It's more likely that a green ball is chosen from Bag A than Bag B because there are more green balls in Bag A than Bag B."

Is he correct?

Yes ☐ No ☐

Give a reason for your answer.

[3 marks]

25 Write 61.6×10^3 in standard form.

[1 mark]

Answer _____

8

26 Adele works out the answer to $\frac{4.1-\sqrt{30}}{19.23}$

She says the answer is positive.

Is she correct?

Yes ☐ No ☐

You **must** show your working.

[2 marks]

27 House prices rise at a rate of 10% each year.

In January 2020, Greta bought a house for £200 000

What is the value of the house in January 2022?

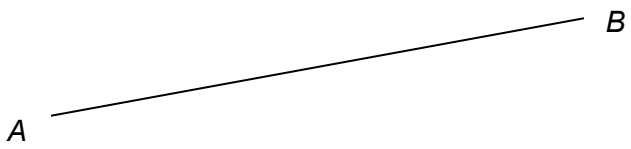
[2 marks]

Answer £ _____

28 Use a ruler and a pair of compasses in this question.

Construct the perpendicular bisector of AB.

[2 marks]

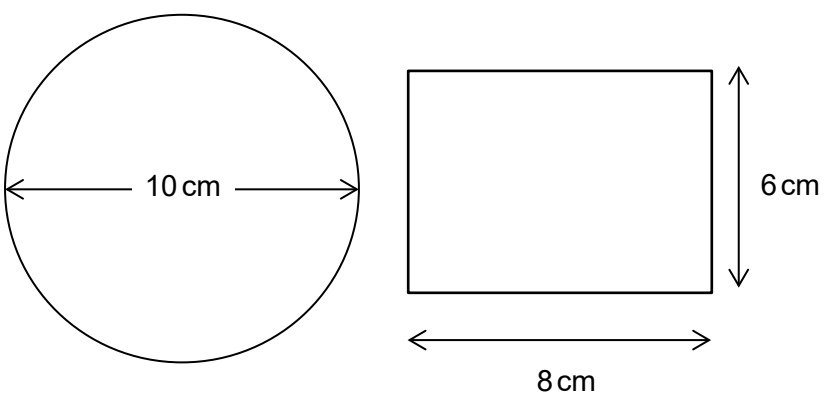


Turn over for the next question

6

29 Sarah has a circular piece of card with a diameter 10 cm.

She wants to cut a rectangle whose sides are length 8 cm and 6 cm.



Use Pythagoras' theorem to show that she can cut the rectangle from the circular card.

[3 marks]

END OF QUESTIONS

3