AQA

Please write clearly in block capitals.

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

Surname _____

Forename(s) _____

Candidate signature _____

GCSE MATHEMATICS

F

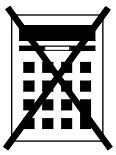
Foundation Tier Paper 1 Non-Calculator

Thursday 25 May 2017 Morning 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	
22–23	
TOTAL	

Do not write outside the box

Answer **all** questions in the spaces provided

1 How many minutes are there in $3\frac{1}{2}$ hours?

Circle your answer.

[1 mark]

180.5 210 330 350

2 Work out $\frac{1}{4} + 0.5$

Circle your answer.

[1 mark]

0.30 0.6 0.75 0.9

3 Which of these shapes has the most sides?

Circle your answer.

[1 mark]

Hexagon Octagon Rhombus Trapezium

Do not write outside the box

4 Solve $x - 3 = 0$

Circle your answer.

[1 mark]

$x = -3$ $x = 0$ $x = \frac{1}{3}$ $x = 3$

5 Work out 58×73

[3 marks]

Answer _____

7

Turn over ►

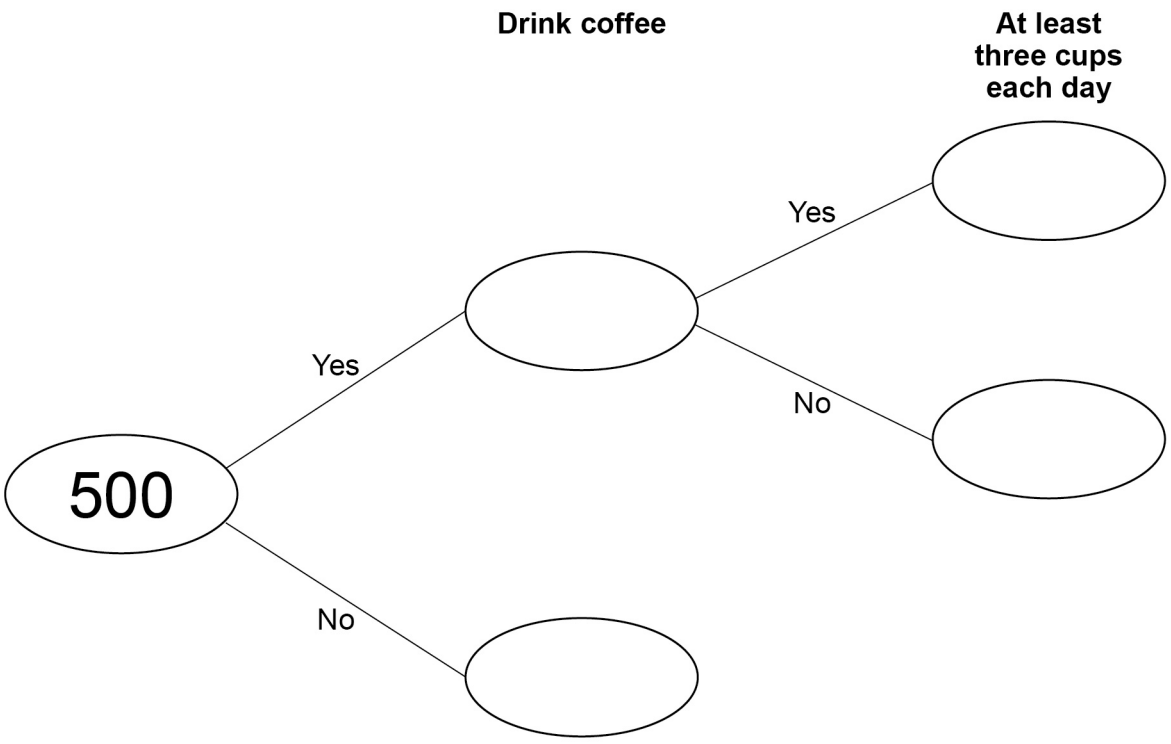
6 500 people are asked if they drink coffee.

$\frac{9}{10}$ say Yes.

20% of the people who say Yes drink at least three cups each day.

6 (a) Complete the frequency tree.

[4 marks]



Do not write outside the box

6 (b) What fraction of the 500 people drink at least three cups of coffee each day?
Give your answer in its simplest form.

[2 marks]

Answer _____

7 By rounding each number to the nearest 10,

estimate the answer to $\frac{61 \times 47}{102}$

You **must** show your working.

[2 marks]

Answer _____

Turn over for the next question

8

Do not write outside the box

8 Nadia has £5 to buy pencils and rulers.

Prices	
Pencils	8p each
Rulers	30p each

She says,

"I will buy 15 pencils.

Then I will buy as many rulers as possible.

With my change I will buy more pencils."

How many pencils and how many rulers does she buy?

[6 marks]

Answer _____ pencils, _____ rulers

Do not write outside the box

9 Work out 25.68 ÷ 12

[2 marks]

Answer _____

10 Work out $\frac{3}{8} \times 11$

Give your answer as a mixed number.

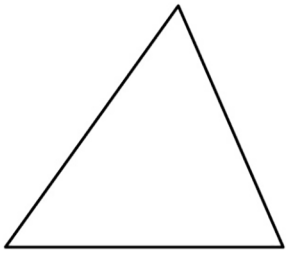
[2 marks]

Answer _____

10

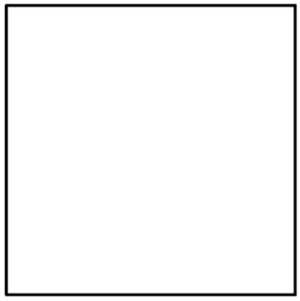
Do not write outside the box

11 A triangle has perimeter 32 cm



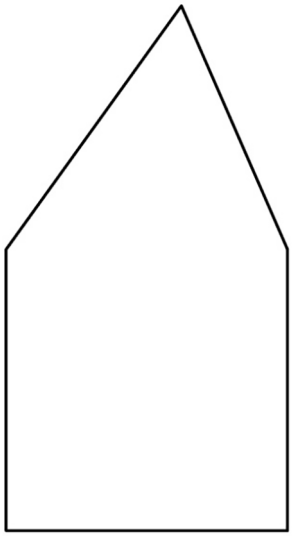
Not drawn accurately

A square has perimeter 40 cm



Two sides of the shapes are put together to make a pentagon.

Not drawn accurately



Do not write outside the box

Work out the perimeter of the pentagon.

[4 marks]

Answer _____ cm

Turn over for the next question

4

Do not write outside the box

12 A football team has P points.

$$P = 3W + D$$

W is the number of wins

D is the number of draws

12 (a) A team has 6 wins and 2 draws.

How many points does the team have?

[1 mark]

Answer _____

12 (b) After 33 games a different team has 53 points.

11 games were draws.

How many games has this team **lost**?

[4 marks]

Answer _____

Do not write outside the box

13 $2 + 0 + 1 + 7 = 10$

Make the following calculations correct.

Use only the symbols $+$, $-$, $\times$, $\div$ and $( )$

[3 marks]

$2 \quad 0 \quad 1 \quad 7 = -4$

$2 \quad 0 \quad 1 \quad 7 = 0$

$2 \quad 0 \quad 1 \quad 7 = 2^4$

Turn over for the next question

8

Do not write outside the box

14 A number is picked at random from the first four **prime** numbers.
A number is picked at random from the first four **square** numbers.
The two numbers are added to get a score.

14 (a) Complete the table.

[4 marks]

Square numbers

+	**1**	**4**	**9**	
2				
3			12	
7				

Prime numbers

14 (b) What is the probability that the score is a **prime** number?

[1 mark]

Answer _____

Do not write outside the box

15 In a school show,

girls : boys = 1 : 1

girls who sing : girls who do not sing = 1 : 2

8 girls **sing** in the show.

How many students are in the show altogether?

[3 marks]

Answer _____

Turn over for the next question

8

Do not write outside the box

16 P and Q are points on the line $3x + 2y = 6$

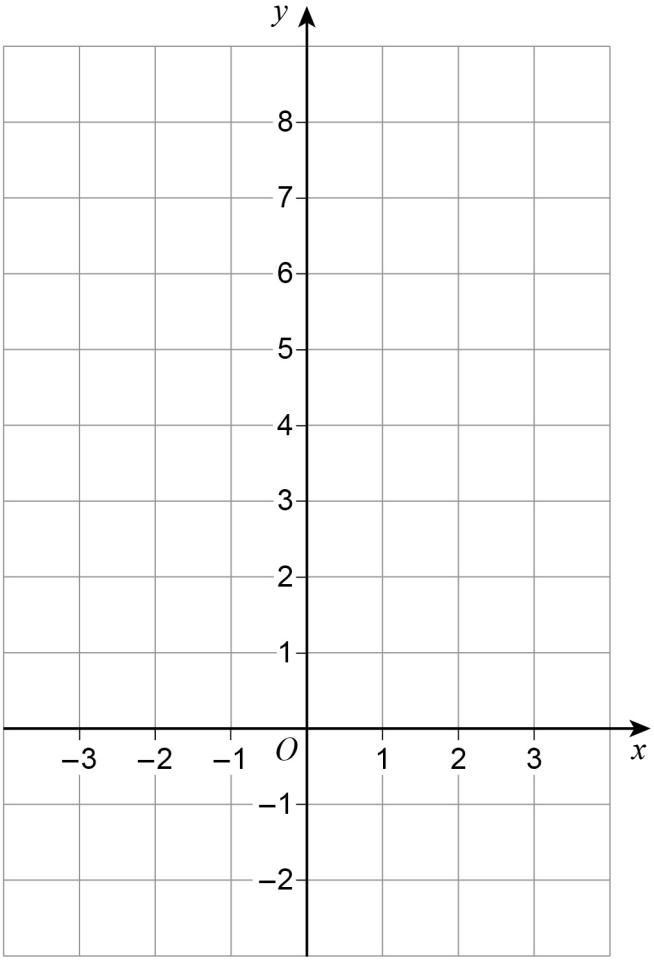
16 (a) Complete the coordinates of P and Q.

[2 marks]

P (0 , _____) Q (_____ , 0)

16 (b) Draw the line $3x + 2y = 6$ for values of x from –3 to 3

[2 marks]



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17 Circle the expression which does **not** simplify to y^3

[1 mark]

$y \times y \times y$ $\quad$ $y^4 \div y$ $\quad$ $y^2 \times y$ $\quad$ $y^6 \div y^2$

18 Write the number six million five thousand two hundred in standard form.

[2 marks]

Answer _____

Turn over for the next question

7

Do not write outside the box

19 (a) Use 8 km/h = 5 mph to convert 96 km/h to mph

[2 marks]

Answer _____ mph

19 (b) x km/h = y mph

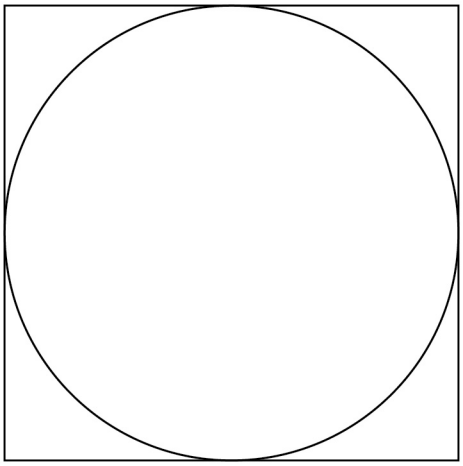
Use 8 km/h = 5 mph to write a formula for y in terms of x.

[2 marks]

Answer _____

Do not write outside the box

20 Here is a circle touching a square.



Not drawn accurately

The area of the square is 64 cm^2

Work out the area of the circle.

Give your answer in terms of π.

[3 marks]

Answer _____ cm^2

Turn over for the next question

7

Do not write outside the box

21 Billy wants to buy these tickets for a show.

4 adult tickets at £15 each

2 child tickets at £10 each

A 10% booking fee is added to the ticket price.

3% is then added for paying by credit card.

Work out the **total** charge for these tickets when paying by credit card.

[5 marks]

Answer £ _____

Do not write outside the box

22 (a) Density = $\frac{\text{mass}}{\text{volume}}$

The mass of solid A is 6 times the mass of solid B.

The volume of solid A is 3 times the volume of solid B.

Complete the sentence.

[1 mark]

The density of solid A is _____ times the density of solid B.

22 (b) Average speed = $\frac{\text{distance}}{\text{time}}$

If the distance is halved and the time is doubled, what happens to the average speed?

Circle your answer.

[1 mark]

$\times 2$ $\times 4$ no change $\div 2$ $\div 4$

Turn over for the next question

7

Do not write outside the box

23 A regular polygon has an exterior angle of 20°

Work out the number of sides of the polygon.

[2 marks]

Answer _____

24 $\frac{1}{2} : \frac{2}{3} = x : 1$

Circle the value of x.

[1 mark]

$\frac{1}{3}$ $\frac{3}{5}$ $\frac{3}{4}$ $\frac{4}{3}$

Do not write outside the box

25 The table shows information about the times for 10 people to complete a task.

Time, t (minutes)	Frequency
$0 < t \leqslant 20$	1
$20 < t \leqslant 40$	6
$40 < t \leqslant 60$	3

These statements are about the mean and range of the actual times.

Tick the correct box for each statement.

[4 marks]

	True	False
The mean could be less than 20 minutes	☐	☐
The mean could be more than 40 minutes	☐	☐
The mean could be less than 40 minutes	☐	☐
The range could be more than 40 minutes	☐	☐
The range could be less than 40 minutes	☐	☐
The range could be more than 60 minutes	☐	☐

7

Turn over ►

Do not write outside the box

26 Write 36 as a product of prime factors.

Give your answer in index form.

[3 marks]

Answer _____

27 Circle the value of cos 90°

[1 mark]

0 $\frac{1}{2}$ $\frac{\sqrt{3}}{2}$ 1

Do not write outside the box

28 Solve the simultaneous equations.

$2x + y = 18$

$x - y = 6$

[3 marks]

Answer _____

END OF QUESTIONS

7

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