AQA

PRACTICE PAPER SET 3

Please write clearly in block capitals.

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

Surname _____

Forename(s) _____

Candidate signature _____

GCSE MATHEMATICS

F

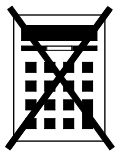
Foundation Tier Paper 1 Non-Calculator

Date of Exam 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.

Answer **all** questions in the spaces provided.

1 What is $\frac{9}{10}$ as a percentage?

Circle your answer.

[1 mark]

0.09% 0.9% 9% 90%

2 Which one of these numbers is a multiple of 12?

Circle your answer.

[1 mark]

72 74 76 78

3 What name is given to the **most frequent** item in a list?

Circle your answer.

[1 mark]

mean median mode range

4 Convert 2.5 metres into centimetres.

Circle your answer.

[1 mark]

0.025 cm 25 cm 205 cm 250 cm

5 Work out $7152 + 876 - 139$

[2 marks]

Answer _____

Turn over for the next question

6 The first part of a show starts at 7.45 pm

It lasts 35 minutes.

6 (a) What time does the first part end?

[1 mark]

Answer _____

6 (b) After the first part there is a 20-minute break.

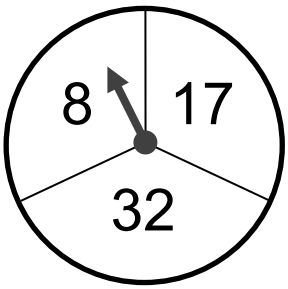
The **second** part lasts 45 minutes.

What time does the second part end?

[2 marks]

Answer _____

7 A game is played with a fair spinner.



The player spins the spinner twice.

The player adds the two numbers to get the score.

7 (a) Complete the table to show the possible scores.

[2 marks]

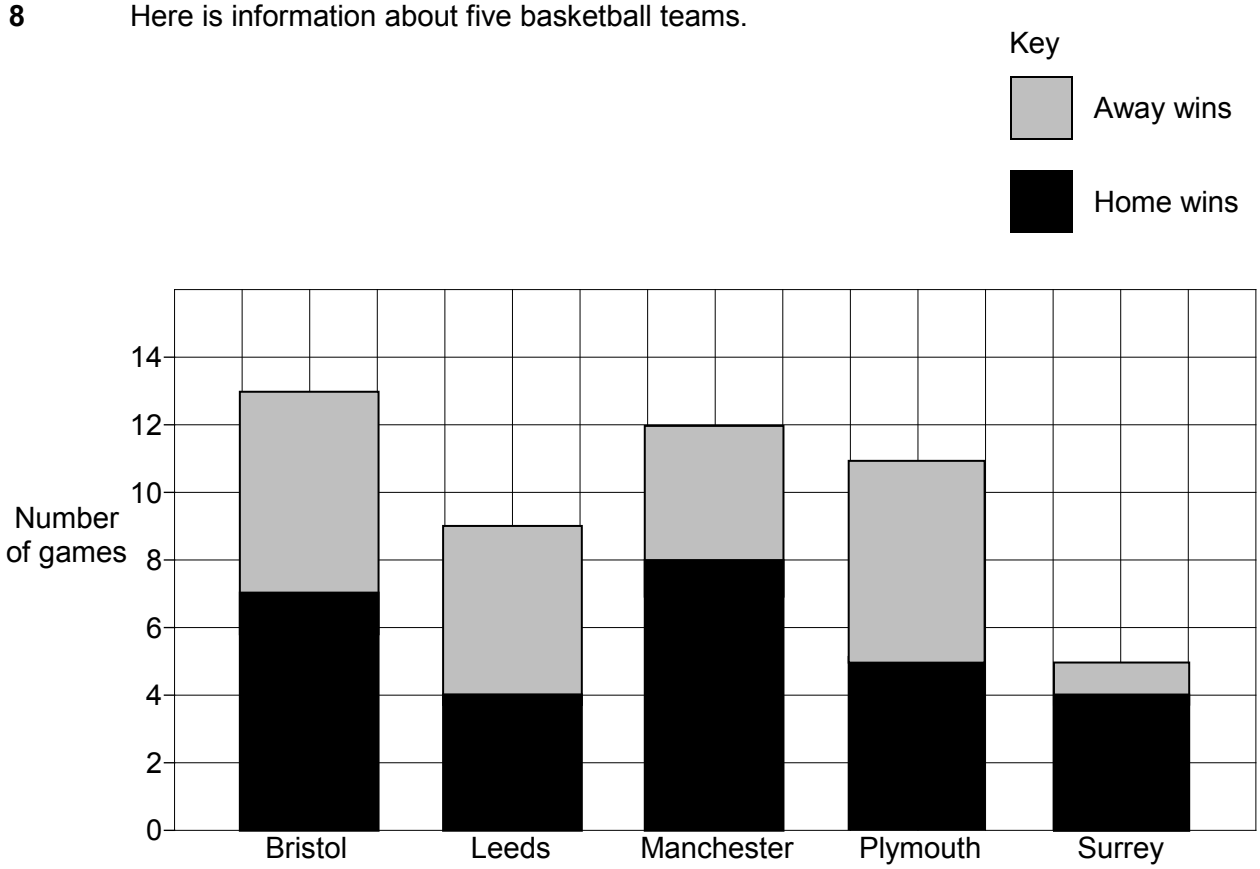
		First spin		
		8	**17**	**32**
Second spin	**8**			
	17			
	32			

7 (b) Work out the probability that the score is a **square** number.

[2 marks]

Answer _____

8 Here is information about five basketball teams.



8 (a) Which team had the most **home** wins?

[1 mark]

Answer _____

8 (b) Which **two** teams had the same number of away wins?

[1 mark]

_____

_____

Answer _____ and _____

8 (c) How many **more** home wins than away wins were there altogether?

[3 marks]

Answer _____

9 (a) Solve $x + 12 = 29$

[1 mark]

x = _____

9 (b) Solve $0.5y = 20$

[1 mark]

y = _____

10 Boxes cost £2.40 each.

You can use this table to work out the cost of different numbers of boxes.

Number of boxes	1	2	5	10
Cost	£2.40	£4.80	£12	£24

10 (a) Work out the cost of 3 boxes.

[2 marks]

Answer £ _____

10 (b) Ethan pays £52.80 for some of these boxes.

Work out the number of boxes he buys.

[2 marks]

Answer _____

10 (c) Use the table to write £9.60 : £12 as a ratio in its simplest form.

[1 mark]

Answer _____ : _____

11 How many degrees does the **hour** hand on a clock turn in 9 hours?

Circle your answer.

[1 mark]

45° 270° 540° 3240°

12 What fraction of $1\frac{1}{4}$ is $\frac{1}{8}$?

Circle your answer.

[1 mark]

$\frac{1}{32}$ $\frac{1}{10}$ $\frac{1}{6}$ $\frac{1}{4}$

13 A point lies on the graph with equation $y = x^2 + x$

The x-coordinate of the point is -3

Circle the coordinates of the point.

[1 mark]

(–3, –12) (–3, –6) (–3, 6) (–3, 12)

Turn over for the next question

14 Is 30×445 greater than 15×900?

Give a reason for your answer.

[2 marks]

Tick a box

Yes ☐ No ☐

Reason

15 Rearrange $p = r + 3$ to make r the subject.

Circle your answer.

[1 mark]

$r = p + 3$ $r = p - 3$ $r = 3 - p$ $r = \frac{p}{3}$

16 (a) Work out $\frac{1}{4} + \frac{7}{10}$

Give your answer as a fraction.

[2 marks]

Answer _____

16 (b) Work out $\frac{3}{5} \times \frac{7}{2}$

Give your answer as a mixed number.

[2 marks]

Answer _____

17 A shopkeeper uses this formula to work out the cost of bags of oranges.

$C = 1.8n$

C is the cost in £

n is the number of bags

17 (a) Work out the cost of 7 bags.

[2 marks]

Answer £ _____

17 (b) There are four oranges in each bag.

Work out the average cost of an orange.

Give your answer in pence.

[2 marks]

Answer _____ pence

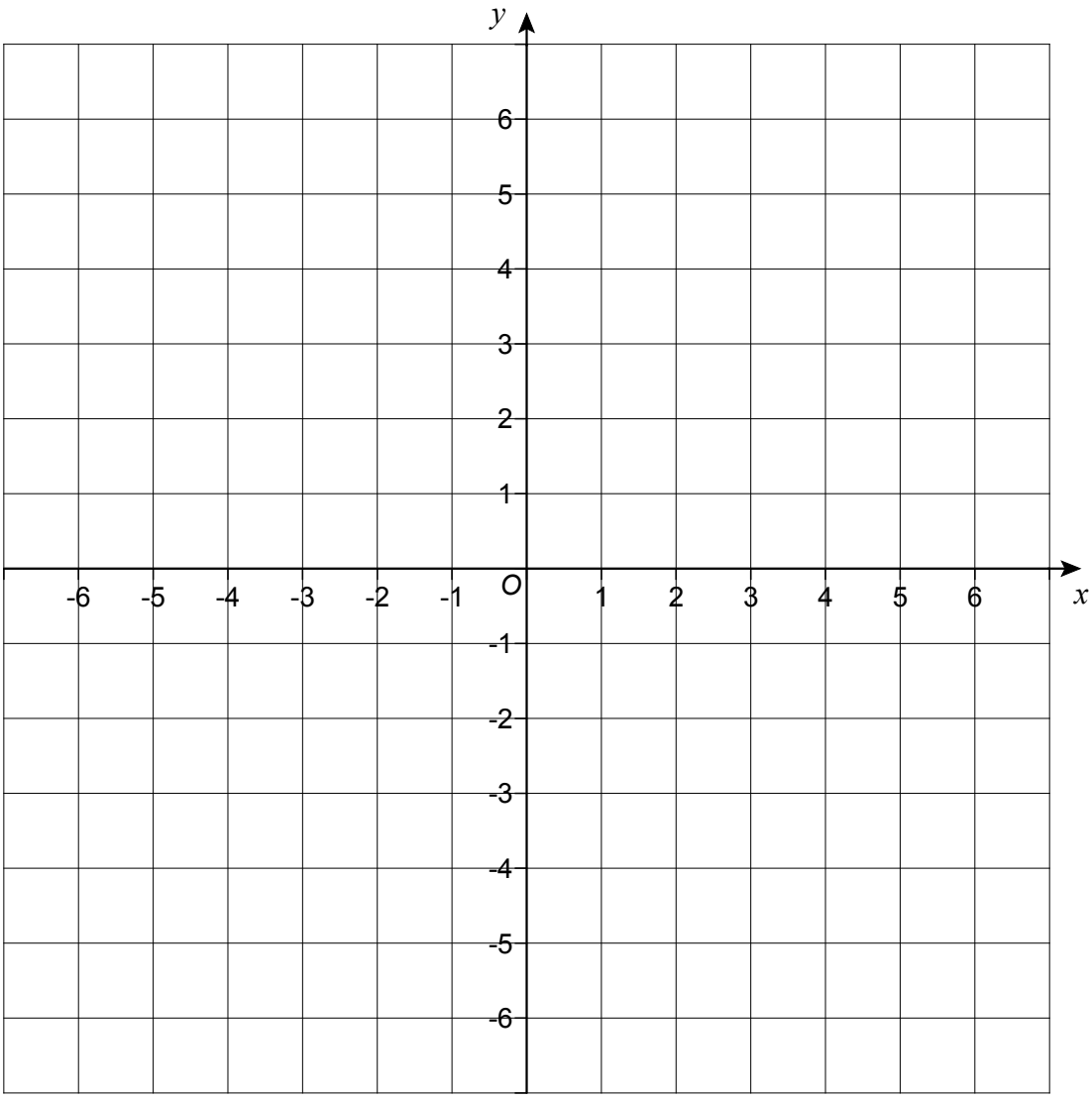
18 A straight line passes through the points (−1, 2) and (1, 6)

Another straight line has equation $y = x$

Work out the coordinates of the point of intersection of the two lines.

You may use the grid to help you.

[4 marks]



Answer (_____ , _____)

19 Ajit is a barber.

He charges £5 for a haircut.

He charges 10% extra for hair gel.

One day 52 customers have a haircut.

16 of these ask for hair gel.

Work out the **total** amount that Ajit charges his customers that day.

[5 marks]

Answer £ _____

20 By rounding each number to 1 significant figure, estimate the answer to

$$\frac{78 \times 11.6}{391}$$

You **must** show your working.

[3 marks]

Answer _____

21 Solve $\frac{x}{3} - 9 = 12$

[2 marks]

x = _____

22 At a lucky dip stall, players pick a ball at random from a tub and then replace it.

The tub contains 250 red balls
230 yellow balls
120 green balls.

Emma has 15 picks.

22 (a) What is the probability that Emma wins a prize with her first pick?

[2 marks]

Answer _____

22 (b) With her 15 picks, Emma wins 4 prizes.

Is this **more** than the expected number?

You **must** show your working.

[2 marks]

Answer _____

23 The air pressure in a tyre measures 7.2 bar.
Air is leaking out at the rate of 0.2 bar per day.

23 (a) Assume that the air continues to leak at the same rate.

After how many days will the pressure measure 4.8 bar?

[2 marks]

Answer _____

23 (b) In fact, the rate that the air leaks out increases each day.

How does this affect your answer to part (a)?

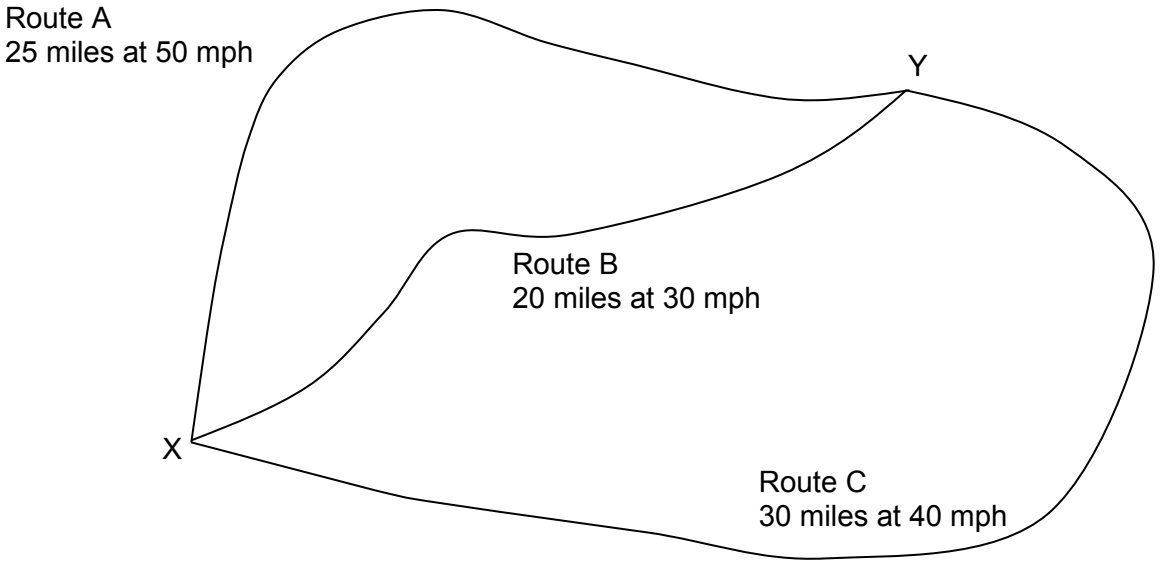
[1 mark]

Turn over for the next question

24 The diagram shows three routes, A, B and C, between two towns, X and Y.

The distance and average speed for each route is shown.

Not drawn accurately



24 (a) Which of the three routes takes the longest time?

Assume the average speeds given.

You **must** show your working.

[4 marks]

Answer _____

24 (b) Jon and Matt take the same time to travel from X to Y.

Jon travels along route B at 10 mph **faster** than the average speed.

Matt travels along route C.

Does Matt travel faster or slower than the average speed for route C, and by how much?

You **must** show your working.

[3 marks]

Tick a box.

Faster ☐ Slower ☐

Answer _____ mph

25 (a) Here are the fourth and fifth terms of a Fibonacci-type sequence.

____ ____ ____ 28 43

Each term is the sum of the previous two terms.

Show that the first term is 2

[2 marks]

25 (b) Here are the first and third terms of a different Fibonacci-type sequence.

a ____ b ____ ____

Each term is the sum of the previous two terms.

Work out an expression in terms of a and b for the fifth term.

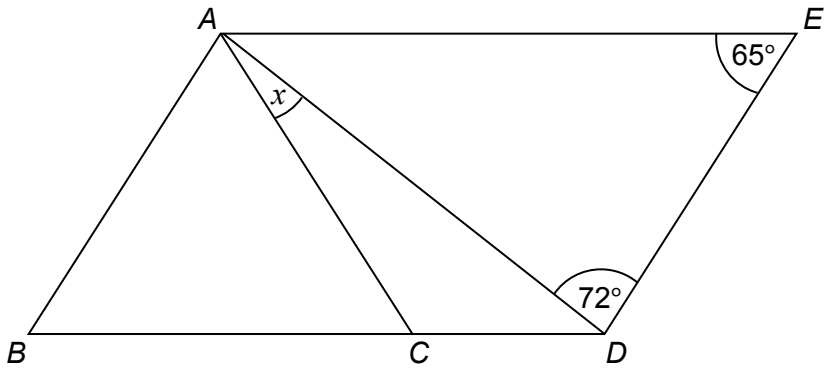
[3 marks]

Answer _____

26 $ABDE$ is a parallelogram.

$AB = AC$

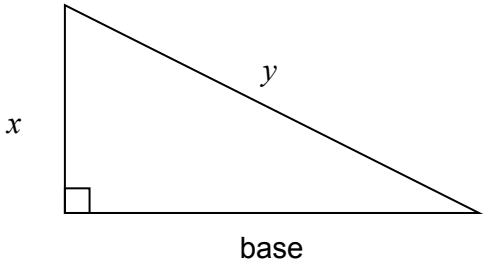
Not drawn accurately



Show that $x = 22°$

[3 marks]

27 Noah is attempting to work out the base of **different** right-angled triangles.



Not drawn accurately

Here is his method with the working for y = 10 and x = 6

Work out the value of y^2	$10^2 = 100$
Work out the value of x^2	$6^2 = 36$
Work out the value of $y^2 - x^2$	$100 - 36 = 64$
The base is $\sqrt{y^2 - x^2}$	base $= \sqrt{64}$

Tick the correct statement.

[3 marks]

☐ The method will **always** give an answer which is a whole number.

☐ The method will **sometimes** give an answer which is a whole number.

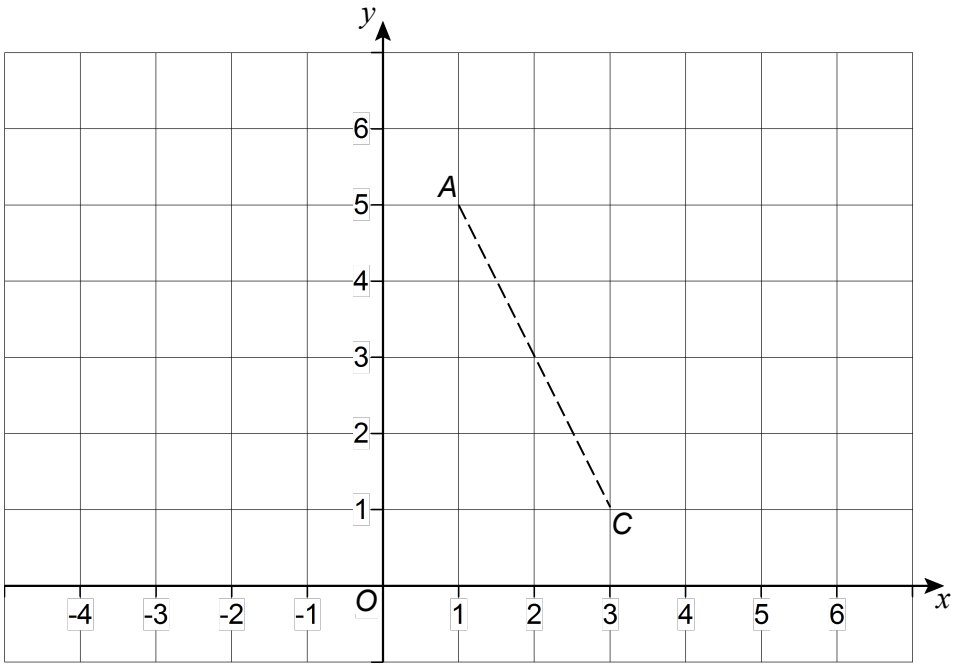
☐ The method will **never** give an answer which is a whole number.

Show working to support your answer.

28 *AC* is a diagonal of kite *ABCD*.

A is the point (1, 5)

C is the point (3, 1)



The diagonals of the kite intersect at *M*, the midpoint of *AC*.

$AM = BM$

$BM : MD = 1 : 2$

Work out possible coordinates for *B* and *D*.

[2 marks]

B (_____ , _____) and *D* (_____ , _____)

END OF QUESTIONS

There are no questions printed on this page

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ANSWER IN THE SPACES PROVIDED