## Collins

## AQA

GCSE

## Mathematics

## SET B - Paper 2 Foundation Tier

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## Materials

## For this paper you must have:

- calculator
- mathematical instruments



## Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Answer all questions.
- You must answer the questions in the space provided.
- In all calculations, show clearly how you work out your answer..


## Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 80 .
- You may use additional paper, graph paper and tracing paper.

Name:

1 (a) Circle the number that is a multiple of both 5 and 8 .

1 (b) Circle the number that is $25 \%$ more than 80.

2 Circle the expression that represents 4 less than $x$.

|  |  |  |  |
| :--- | :--- | :--- | :--- |
| $4-x$ | $\frac{x}{4}$ | $x-4$ | $4 x$ |

3 Circle the value of $3+4 \times 5^{2}$
$103 \quad 175 \quad 403 \quad 1225$

4 Here are four numbered cards.


4 (a) Write down the biggest four-digit odd number that can be made with the cards.

4 (b) How many numbers between 4000 and 5000 can be made with the four cards?

Here are six shapes.


5 (a) Which two shapes are exactly the same?

Answer

5 (b) Here is shape $\mathbf{A}$.


Write down the order of rotational symmetry of this shape.

Answer

5 (c) Here is shape D.


Write down the number of lines of symmetry of this shape.

Answer

5 (d) Here is shape $\mathbf{F}$.


Circle the type of angle marked.
Acute
Obtuse
Reflex
Right

6 A shop sells beach toys.


Bucket $£ 2.49$


Spade $£ 1.49$


Rubber ring $£ 3.50$
(a) Josie buys one of each item.

She pays with a $£ 10$ note.
How much change should she get?

Answer f

6
(b) Josie receives her change in the least number of coins possible.

Which coins did she get?

## Answer

7 (a) Round the number 278 to the nearest 10.

Answer

7 (b) Round the number 3850 to the nearest 100.

Answer

8 (a) Write down the rule for continuing this sequence.

Answer

8 (b) Write down the next term in the sequence in part (a).

8 (c) Write down the next term in this sequence.

2
3
5
8
13
21

Answer

8 (d) Write down the $n$th term of this sequence.

3
8
13
18
23
[1 mark]

Answer

9 A shape is drawn on a centimetre grid.


Show clearly that the area of the shape lies between $13 \mathrm{~cm}^{2}$ and $33 \mathrm{~cm}^{2}$.

10 A running club meets on Tuesday evening.
The bar chart shows how many members came each Tuesday in January.
The information for week 4 is missing.


10 (a) How many members came to the club in week 2?

Answer

10 (b) How many more members came in week 3 than week 1?

Answer

10 (c) The club has 60 members.
$55 \%$ of the members came to the club in week 4.
Complete the bar chart.
[3 marks]
(d) The club chairman said,
"On average over half of our members came each week in January".
Is she correct?

Tick a box $\quad \square$ Yes $\quad \square$ No $\quad \square$ Cannot tell

Give reasons for your choice below.

On the grid below draw
a circle, radius 5 cm centred on $A$
a 6 cm by 8 cm rectangle inside the circle
a diagonal of the rectangle.


12
(a) Solve $x-9=17$

13 (a) Use your calculator to work out $\sqrt[3]{46.656}$
(b) Solve $\frac{x}{4}=8$

$$
x=
$$

$$
x=
$$

Answer

13 (b) Use your calculator to work out $\sqrt{105}+19.8^{2}$

Answer

13 (c) Use estimation to show that your answer to part (b) is sensible.

14 A bag contains 20 counters.
8 of the counters are yellow.
5 of the counters are blue.
The rest of the counters are red.
Work out the probability that a counter taken at random from the bag is red.

## Answer

15 This formula is used to work out the cost of a taxi fare.
Fare $=£ 4.00+£ 2.25$ for each mile $+£ 0.75$ for every minute stationary
15 (a) Jasmine takes a taxi that travels a distance of 7 miles and is stationary for 8 minutes.
How much was her fare?

## Answer f

15 (b) Alf takes a taxi that travels a distance of 6 miles.
His fare is $£ 21.25$

For how many minutes was the taxi stationary?

Answer
minutes

16 (a) Expand $(x-2)(x+3)$

16 (b) Factorise $x^{2}+4 x+3$

## Answer

17 (a) Reflect the triangle in the line $y=-1$


17 (b) Translate the triangle by $\binom{-3}{-4}$


18 Work out the length $x$ in the triangle.


$$
x=
$$

cm

19 The table shows the heights of some young trees.

| Height, $h \mathrm{~cm}$ | Frequency |
| :---: | :---: |
| $140 \leqslant h<150$ | 5 |
| $150 \leqslant h<160$ | 9 |
| $160 \leqslant h<170$ | 12 |
| $170 \leqslant h<180$ | 8 |
| $180 \leqslant h<190$ | 6 |

Work out an estimate of the mean height.

## Answer

cm
(a) As a product of prime factors $20=2^{2} \times 5$

Work out 28 as a product of prime factors.

Answer
(b) Work out the least common multiple of 20 and 28.

21 Triangles $A B C$ and $P Q R$ are similar.


Work out the value of $x$.

Answer

22 A washing machine is reduced by $15 \%$ in a sale.
The sale price of the washing machine is $£ 238$.
What was the original price of the washing machine?

23 Two numbers are in the ratio 2 : 5
The difference between the numbers is 36 .
Work out the values of the two numbers.

## Answer

and

24 The area of this semicircle is $201 \mathrm{~cm}^{2}$ to 3 significant figures.


Work out the perimeter of the semicircle.

25 Using a ruler and compasses only, construct an angle of $60^{\circ}$ at $A$.
You must show your construction arcs.
[2 marks]

## A

