## Collins

## Edexcel <br> GCSE <br> Mathematics

SET B - Paper 2 Foundation Tier (Calculator)

## Author: Keith Gordon

## Time allowed: 1 hour 30 minutes

## You must have:

- Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator


## Instructions

- Use black ink or black ball-point pen.
- Answer all questions.
- Answer the questions in the spaces provided - there may be more space than you need.
- Calculators may be used.
- Diagrams are NOT accurately drawn, unless otherwise indicated.
- You must show all your working out.


## Information

- The total mark for this paper is 80 .
- The marks for each question are shown in brackets
- use this as a guide as to how much time to spend on each question.
- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Name: $\qquad$

## Answer ALL questions.

## Write your answers in the spaces provided.

## You must write down all the stages of your working.

1 (a) Write down a number that is a multiple of both 5 and 8 .
(b) Work out the number that is $25 \%$ more than 80 .


2 Write down an expression that represents 4 less than $x$.

4 Here are four numbered cards.

(a) Write down the biggest 4-digit odd number that can be made with the cards.
(b) How many numbers between 4000 and 5000 can be made with the four cards?

5 Here are six shapes.

(a) Which two shapes are exactly the same?
(b) Here is shape $\mathbf{A}$.


Write down the order of rotational symmetry of this shape.
(c) Here is shape $\mathbf{D}$.


Write down the number of lines of symmetry of this shape.
(d) Here is shape $\mathbf{F}$.


What type of angle is the one marked?

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?

## $£$

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

Which coins did she get?

7 (a) Round 278 to the nearest 10 .
(b) Round 3850 to the nearest 100 .

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

| 5 | 9 | 13 | 17 | 21 | $\ldots$. |
| :--- | :--- | :--- | :--- | :--- | :--- |

(b) Write down the next term in the sequence in part (a).
(c) Write down the next term in this sequence.
$\begin{array}{llllll}2 & 3 & 5 & 8 & 13 & 21\end{array}$
(d) Write down the $n$th term of this sequence.
$\begin{array}{lllll}3 & 8 & 13 & 18 & 23\end{array}$

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.

(a) How many members came to the club in week 2?
(b) How many more members came in week 3 than in week 1 ?
(c) The club has 60 members.
$55 \%$ of the members came to the club in week 4.

Complete the bar chart.
(d) The club chairman said, "On average over half of our members came each week in January". Is she correct?

Tick a box


Give reasons for your choice below.

11 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 $x-9=17$
(b) Solve $\frac{x}{4}=8$

13 (a) Use your calculator to work out $\sqrt[3]{46.656}$
(b) Use your calculator to work out $\sqrt{105}+19.8^{2}$
(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.

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.
(a) Jasmine takes a taxi that travels a distance of 7 miles and is stationary for 8 minutes.

How much was her fare?
(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?

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

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

(2)
(b) Translate the triangle by $\binom{-3}{-4}$


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

$x=$
cm
(Total for Question 18 is $\mathbf{3}$ marks)

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.

20 (a) As a product of prime factors $20=2^{2} \times 5$
Work out 28 as a product of prime factors.
(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 $x$.
$\qquad$

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.

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


Work out the perimeter of the semicircle.

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

