## Collins

## Edexcel

## Mathematics

## SET A - Paper 1 Foundation Tier (Non-Calculator)

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## Time allowed: 1 hour 30 minutes

You must have:

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



## You may not use a 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 not 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 Calculate $3^{2} \times 2^{3}$

2 Write down the first five prime numbers.

3 Write down the following fractions in order of size from lowest to highest.
$\frac{1}{3}, \frac{1}{6}, \frac{4}{9}, \frac{1}{9}$

5 Change $\frac{7}{8}$ to a decimal.

6 The shape P is rotated clockwise through $90^{\circ}$, using a centre of rotation $(0,1)$.
Draw the new shape on the grid provided.


7 Calculate $1 \frac{2}{3} \times 4 \frac{1}{2}$

Find the area of the following semicircle, expressing your answer as a multiple of $\pi$.


9 Hot dog buns come in packs of 6 .
To serve enough hot dogs for everyone at his party, Gavin needs to buy enough packs to make 75 hot dogs. Calculate the least number of packs Gavin needs to buy.

11 Find the lowest common multiple of 15 and 20.

12 Solve the equation $\frac{x-1}{6}=\frac{10-x}{3}$

13 The plan, front elevation and side elevation of a solid prism are shown below.

(a) Draw a sketch of the solid prism in three dimensions.
(b) Determine the volume of the prism.

14 Helen can either cycle to school, take the bus or just walk.
The probability that she cycles to school on any randomly selected day is $\frac{2}{5}$ and the probability that she takes the bus is $\frac{3}{10}$
Calculate the probability that she walks to school.

15 In the diagram below, calculate the size of each of the missing angles.


Not drawn accurately

$$
\begin{array}{ll}
a= \\
b= & { }^{\circ} \\
c= & { }^{\circ}
\end{array}
$$

16 The following table shows the favourite sport of 60 randomly selected students.

| Sport | Frequency |
| :---: | :---: |
| Soccer | 16 |
| Tennis | 12 |
| Swimming | 6 |
| Athletics | 16 |
| Hockey | 10 |

(a) Draw a pie chart to illustrate the above data.
(b) A student is selected at random from the sample.

Find the probability that the student's favourite sport is either tennis or swimming.

17 Jeff travels from London to Birmingham, then on to Carlisle and then on to Glasgow.
On each leg of the journey he can either travel by coach or train.
In how many different ways can Jeff travel from London to Glasgow?

18 Work out $2.98 \times 5.1$

Find the exact value for $x$ in the following triangle.


Not drawn accurately
$x=$
cm
(Total for Question 19 is $\mathbf{4}$ marks)

20 Asif drives 200 km from London to Bath.

Assuming he travels at a constant speed of $80 \mathrm{~km} / \mathrm{h}$, calculate the time his journey takes, in hours and minutes.

21 Match the correct graph with the functions below.


A: $y=\frac{1}{x}$

B: $y+x+1=0$

C: $y=\frac{1}{2} x^{3}$

D: $y=3 x^{2}$

22 Tim's time in the evening is spent doing either homework or relaxing, in the ratio $2: 5$
One evening, $\frac{2}{3}$ of Tim's homework is mathematics.
If Tim's evening lasts a total of 7 hours, calculate how long (in hours and minutes) Tim spends on his maths homework.

23 A pair of shoes is reduced to $£ 76$ in a quick sale.
If this is a $5 \%$ reduction on the original price, find the original price of the shoes.

24 Calculate $5 \frac{1}{3} \div \frac{2}{9}$

25 Write the following numbers in standard form.
(a) 33000
(b) 0.0082
(c) $0.002 \times 10^{-4}$

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