## Practice Paper 1

Please write clearly in block capitals.

Centre number


Candidate number


Surname
Forename(s)
Candidate signature

## GCSE

## Mathematics

Foundation


## Summer 2018

Time allowed: 1 hour 30 minutes

## Materials

For this paper you must have:

- a 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 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 the answer book.


## Advice

| For Examiner's Use |  |
| :---: | :---: |
| Pages | Mark |
| 3 |  |
| $4-5$ |  |
| $6-7$ |  |
| $8-9$ |  |
| $10-11$ |  |
| $12-13$ |  |
| $14-15$ |  |
| $16-17$ |  |
| $18-19$ |  |
| $20-21$ |  |
| $22-23$ |  |
| TOTAL |  |

- In all calculations, show clearly how you work out your answer.


## Practice Paper Overview

| Q | Topic | Mark | Total |
| :---: | :---: | :---: | :---: |
| 1 | Fractions to Decimals |  | 1 |
| 2 | Indices |  | 1 |
| 3 | Units of Length |  | 1 |
| 4 | Negative Numbers |  | 1 |
| 5 | Probability |  | 4 |
| 6 | Coordinates |  | 2 |
| 7 | Bank Statement |  | 4 |
| 8 | Ratio and Area |  | 3 |
| 9 | Number Problem |  | 3 |
| 10 | Lines of Symmetry |  | 1 |
| 11 | Frequency Tree |  | 5 |
| 12 | Best Buy |  | 4 |
| 13 | Nets |  | 1 |
| 14 | Function Machines |  | 4 |
| 15 | Inequality on a Number Line |  | 1 |
| 16 | Venn Diagram |  | 3 |
| 17 | Sequences |  | 3 |
| 18 | Congruence |  | 2 |
| 19 | Angles on Parallel Lines |  | 4 |
| 20 | Expand and Simplify Double Brackets |  | 4 |
| 21 | Product of Prime Factors |  | 3 |
| 22 | Averages from a Table |  | 6 |
| 23 | Reverse Percentage |  | 4 |
| 24 | Compound Interest |  | 5 |
| 25 | Pythagoras' Theorem |  | 3 |
| 26 | Right-Angled Trigonometry |  | 2 |
| 27 | Equation of Parallel Lines |  | 1 |
| 28 | Form and Solve Equations |  | 4 |
|  | Total |  | 80 |

## Answer all questions in the spaces provided.

1 Circle the decimal that has the same value as $\frac{13}{5}$
0.6
10.6
13.5
2.6
2.3

2 Work out 64 as a power of 2.
Circle your answer.
[1 mark]
$\begin{array}{lllll}8^{2} & 2^{3} & 2^{4} & 2^{5} & 2^{6}\end{array}$

3 Which unit is not a unit of length.

> miles
km
kg
m

4 Which statement is true?
Circle your answer

| -4 is greater than -7 | -7 is greater than -4 |
| :--- | :--- |
| -4 is greater than 7 | -7 is greater than 4 |

5 A tin contains four different types of biscuits.
A biscuit is taken from the tin at random.
The table below shows some of the probabilities of taking each type of biscuit.

| Biscuit | Bourbon | Ginger Nut | Oreo | Digestive |
| :--- | :---: | :---: | :---: | :---: |
| Probability | 0.3 | 0.1 |  | 0.2 |

5 (a) Complete the table.
[2 marks]
$\qquad$
$\qquad$

5 (b) What is the probability that a bourbon or a digestive is taken from the tin?
[2 marks]
$\qquad$
$\qquad$

Answer $\qquad$
$6 \mathrm{~A}(3,4), B(-4,-2)$ and $C(5,-2)$ are three points.


What type of triangle is $A B C$ ?
You must show your working, which may be on the diagram.
[2 marks]

Answer

7 Here is a bank statement.

| Date | Description | Credit $£$ | Debit $£$ | Balance $£$ |
| :---: | :--- | :---: | :---: | :---: |
| $3^{\text {rd }}$ June | Starting Balance |  |  | 96.07 |
| $4^{\text {th }}$ June | Wage | 829.34 |  |  |
| $5^{\text {th }}$ June | Rent |  |  | 465.41 |
| $6^{\text {th }}$ June | Council Tax |  | 84.28 |  |
| $7^{\text {th }}$ June | Cash paid in | 36.17 |  |  |
| $8^{\text {th }}$ June | Water Bill |  | 28.49 | 388.81 |

Complete the bank statement.
[4 marks]
8 Work out

$$
\text { area of shape } A \text { : area of shape } B
$$

|  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  | A |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | I |  |
|  |  |  |  |  |  |  |  |  | B |  |
|  |  |  |  |  |  |  |  |  |  |  |

Give your answer in its simplest form.
$\qquad$
$\qquad$
Answer

9 The two numbers, $A$ and $B$, are shown on a scale.


The difference between $A$ and $B$ is 42 .
Work out the value of $A$ and the value of $B$.
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$A=$
$B=$


1180 students are surveyed at random about whether they have a packed lunch or a school dinner.
$\frac{2}{5}$ of those selected are male.
56 people have school dinners altogether.
Twice as many females have school dinners to packed lunches.
Complete the frequency tree.

$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$

12 Bottles of water are sold in packs of 8 and packs of 12.


1 pack of 8 for $£ 1.80$
or
2 packs of 8 for $£ 3.25$


1 pack of 12 for $£ 2.55$
or
2 packs of 12 for $£ 5$

What is the cheapest way to buy 40 bottles of water?
You must show your working.
[4 marks]
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$

Answer $\qquad$

13 Here is the net of a 3D shape.


Circle the correct name of the 3D shape.

Triangle

Square based pyramid

Triangular prism
Triangular based pyramid

14 Here is a function machine.


14 (a) Calculate the input if the output is 7.2 .
[2 marks]
$\qquad$
$\qquad$
Answer

14 (b) If the output is $2 x$. Write an expression for the input.
$\qquad$
$\qquad$
$\qquad$

Answer

15 Circle the inequality that represents the solution set on the number line.

[1 mark]

$$
\begin{array}{ll}
-2<x<4 & -2 \leq x<4 \\
-2<x \leq 4 & -2 \leq x \leq 4
\end{array}
$$

16 Here is a Venn diagram

$\varepsilon=\{1,2,3,4,5,6,7,8,9,10\}$
$\mathrm{P}=$ prime numbers
$E=$ even numbers
Complete the Venn Diagram

17 Here are the first three patterns in a sequence.
The patterns are made from triangles and pentagons.


17 (a) How many triangles are there in pattern number 5 ?

Answer

Faith says
"There are 11 triangles in pattern number 3. so there will be 33 triangles in pattern number 9."

17 (b) Is Faith correct?
Give a reason for your answer.

$\square$ Incorrect

18 Here are four triangles


Not drawn
accurately
B


C


18 (a) Which two triangles are congruent? Circle your answers.
A
B
C
D

18 (b) Circle the reason for your answer to part (a).

SSS
ASA
SAS
RHS
R

19 AB is parallel to CD .


Not drawn accurately

Show that angle $x=35^{\circ}$

Show that angle $x=35^{\circ}$

$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$

Answer $\qquad$

20 (a) Expand and simplify $(x+2)(x-3)$
[2 marks]
$\qquad$
$\qquad$

Answer
20 (b) Factorise and solve $x^{2}+6 x+8=0$

## Answer

21 Express 1400 as a product of its prime factors in index form.

Answer

22 The table shows some information about the heights of 120 adults.

| Height (h, cm) | Number of <br> adults |
| :---: | :---: |
| $150 \leq h<155$ | 12 |
| $155 \leq h<160$ | 26 |
| $160 \leq h<170$ | 31 |
| $170 \leq h<175$ | 37 |
| $175 \leq h<200$ | 14 |

22 (a) In which class interval is the median?
Circle your answer.

$$
\begin{gathered}
150 \leq h<155 \quad 155 \leq h<160 \quad 160 \leq h<170 \\
170 \leq h<175
\end{gathered}
$$

22 (b) Calculate an estimate for the mean height.
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$

Answer

22 (c) Kenan says
" $30 \%$ of the adults measured are under 160 cm tall."
Does the data support this statement?
You must show your working.
[2 marks]

$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$

23 Joe sells caricature portraits.
He currently adds $28 \%$ profit to the cost price.
He sells the portraits for $£ 256$ each.
He wants to increase the profit to $35 \%$ of the cost price.
How much should he sell each picture for?
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$

Answer $\qquad$

24 The value of a house $£ V$ is given by

$$
V=125000 \times 1.004^{t}
$$

24 (a) Write down the value of the house when $t=0$

Answer
24 (b) What is the value of the house after 4 years?
$\qquad$
$\qquad$
$\qquad$

Answer
24 (c) After how many years will the house's value be above $£ 130000$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$

Answer

25 Find the length of the side $x$.

[3 marks]

## Answer

26 Calculate the size of the angle marked $x$.
Not drawn accurately

$\qquad$
$\qquad$
$\qquad$
$\qquad$

Answer

27 Circle the equation of a line that is parallel to $y=2 x-5$

$$
\begin{gathered}
y=5 x-2 \quad y=\frac{1}{2} x-5 \quad y=2 x+6 \\
y=-2 x+5 \quad y=5-\frac{1}{2} x
\end{gathered}
$$

$28 A B, C D$ and $E F$ are straight lines.
$A B$ is parallel to $C D$.
All angles are in degrees.
Not drawn
accurately

B
$5 x-26$


Find the size of angle EFD
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$

Answer $\qquad$

