GradeMax

Cambridge Assessment International Education

# Cambridge IGCSE™

CANDIDATE NAME

CENTRE NUMBER | | | | | |

CANDIDATE NUMBER | | | | |

*5961784720*

**MATHEMATICS** **0580/13**

Paper 1 (Core) **October/November 2022**

**1 hour**

You must answer on the question paper.

You will need: Geometrical instruments

**INSTRUCTIONS**

- Answer **all** questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.
- You should use a calculator where appropriate.
- You may use tracing paper.
- You must show all necessary working clearly.
- Give non-exact numerical answers correct to 3 significant figures, or 1 decimal place for angles in degrees, unless a different level of accuracy is specified in the question.
- For $\pi$, use either your calculator value or 3.142.

**INFORMATION**

- The total mark for this paper is 56.
- The number of marks for each question or part question is shown in brackets [ ].

This document has **12** pages.


© UCLES 2022

**[Turn over**

**1** Complete this shopping bill.

2.25 kg apples at \$2.80 per kg = \$ .....

3.2 kg carrots at \$0.65 per kg = \$ .....

Total = \$ ..... [3]

**2** Sunita is 3 years and 4 months old.

Work out her age in months.

..... months [1]

**3**

120 121 149 164 216

From this list, write down

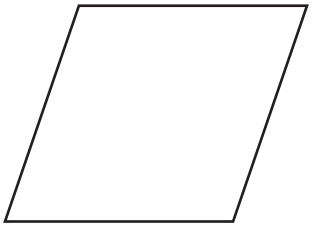
**(a)** a square number,

..... [1]

**(b)** a cube number.

..... [1]

**4** The diagram shows a shape with four sides of equal length.



**(a)** Write down the mathematical name of this shape.

..... [1]

**(b)** Write down the order of rotational symmetry of this shape.

..... [1]

© UCLES 2022

**5** The stem-and-leaf diagram shows the marks scored by each of 35 students in a science test.

| | |
|---|---|
| 2 | 7 8 8 9 |
| 3 | 0 2 2 4 5 7 8 9 |
| 4 | 1 1 2 3 4 5 7 8 9 9 |
| 5 | 0 2 3 5 5 5 6 7 7 8 |
| 6 | 1 2 4 |

Key: 2 | 7 represents 27

**(a)** Find the range.

..... [1]

**(b)** Find the mode.

..... [1]

**(c)** Find the median.

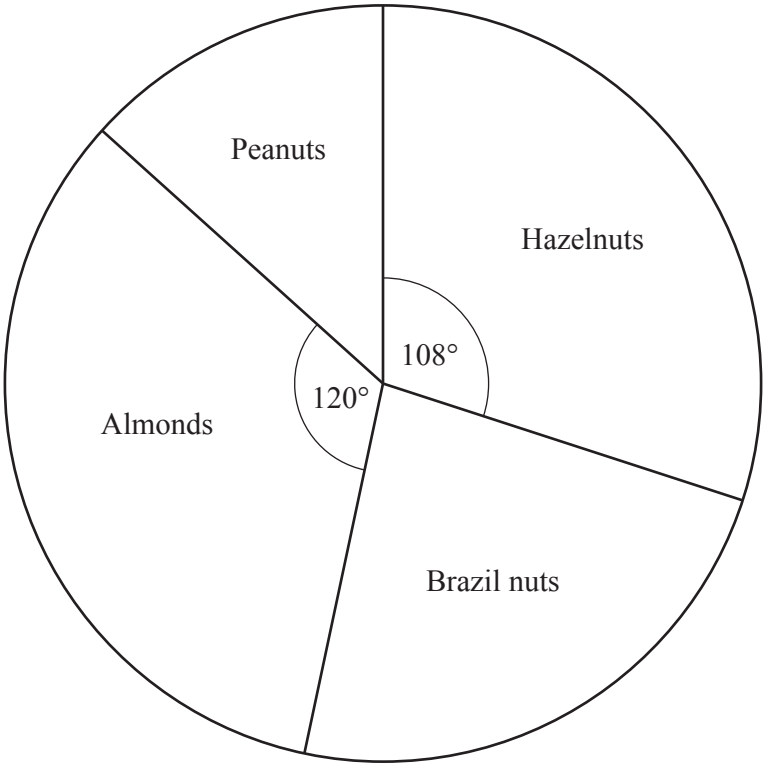
..... [1]

**6** Marco starts work at 2045 and finishes at 0208 the next day.

Find the length of time, in hours and minutes, he works.

..... h ..... min [1]

**7** Jo counts the number of each type of nut in a bag.
The pie chart shows the results.




**(a)** Measure the size of the angle for the peanuts.

..... [1]

**(b)** What fraction of the nuts are almonds?
Give your answer in its simplest form.

..... [1]

**(c)** There are 45 hazelnuts in the bag.

Calculate the total number of nuts in the bag.

..... [2]

© UCLES 2022

**8** Calculate.

$$\sqrt{15} + \frac{4.8}{2.2}$$

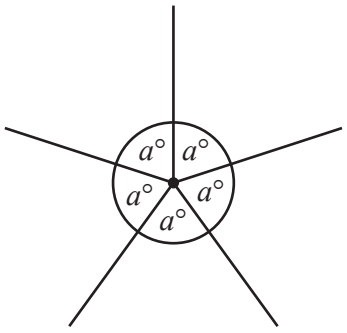
..... [1]

**9** Nerina invests \$5400 at a rate of $r$% per year simple interest.
At the end of 3 years, the total interest earned is \$429.30 .

Calculate the value of $r$.

$r =$ ..... [2]

**10**




Give the geometrical reason why the value of $a$ is 72.

.....

..... [1]

GradeMax



**11** **(a)** Expand the brackets and simplify.

**(i)** $3(2d-3)+4(d+1)$

..... [2]

**(ii)** $(x-4)(x-3)$

..... [2]

**(b)** Factorise $8p-3pq$.

..... [1]

**12** **Without using a calculator**, work out $\frac{5}{7}-\frac{2}{3}$.
You must show all your working and give your answer as a fraction in its simplest form.

..... [2]

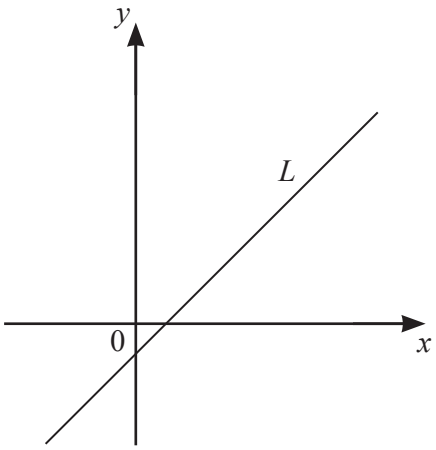
**13** $x$ is an integer where $x > -4$ and $x \leqslant 2$.

Write down all the possible values of $x$.

..... [2]

© UCLES 2022

**14**

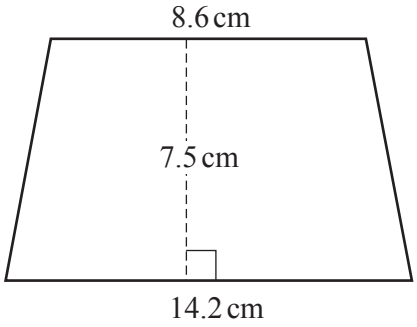



Explain why the equation of line $L$ in the diagram cannot be $y = x + 2$.

.....

..... [1]

**15**




NOT TO SCALE

Work out the area of the trapezium.

..... $cm^2$ [2]

GradeMax



**16** The circumference of a circular pond is 130 cm.

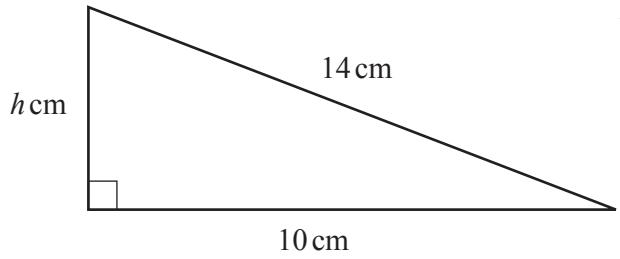
Calculate the radius of the pond.

..... cm [2]

**17** Write 0.007 in standard form.

..... [1]

**18**




NOT TO SCALE

The diagram shows a right-angled triangle.

**(a)** Calculate the value of $h$.

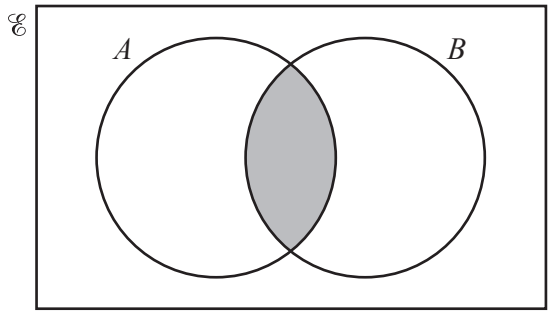
$h =$ ..... [3]

**(b)** Find the perimeter of this triangle.

..... cm [1]

© UCLES 2022

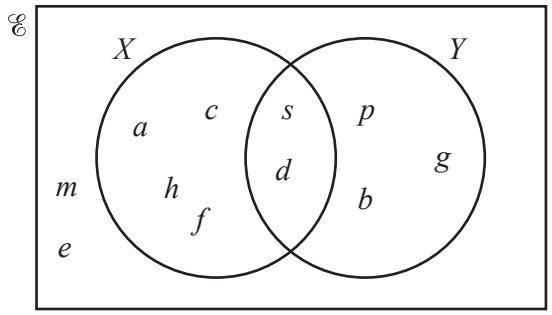
**19 (a)**




Use set notation to describe the shaded region in the Venn diagram.

..... [1]

**(b)**




**(i)** List the elements of set $Y$.

..... [1]

**(ii)** Write down $n(X \cup Y)$.

..... [1]

© UCLES 2022

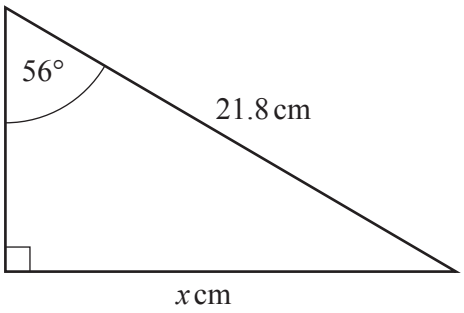
**20** Solve the simultaneous equations.

$$3x - 2y = 21$$
$$5x + 2y = 51$$

$x =$ .....

$y =$ ..... [2]

**21**




NOT TO SCALE

The diagram shows a right-angled triangle.

Calculate the value of $x$.

$x =$ ..... [2]

**22** **(a)** $120 = 2^m \times 3 \times 5$

Find the value of $m$.

$m =$ ..... [1]

**(b)** One traffic light changes to red every 120 seconds.
Another traffic light changes to red every 144 seconds.
Both change to red at 10 00.

Find the time at which they next change to red together.

..... [3]

**23** Make $m$ the subject of the formula $q = \frac{m}{7} + r$.

$m =$ ..... [2]

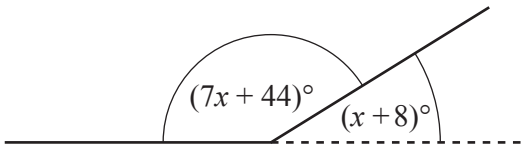
**Question 24 is printed on the next page.**

© UCLES 2022

GradeMax



**24**




NOT TO SCALE

The diagram shows two sides of a regular polygon.
The interior angle of the polygon is $(7x + 44)°$ and the exterior angle is $(x + 8)°$.

Find the number of sides of this polygon.

..... [4]

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cambridgeinternational.org after the live examination series.

Cambridge Assessment International Education is part of Cambridge Assessment. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which is a department of the University of Cambridge.