

First Name	
Last Name	
Date	
Total Marks	/ 100 marks

MathsMadeEasy

GCSE Mathematics
Calculator
Foundation Tier
Free Practice Set 3
1 hour 30 minutes



Answers at:

<http://www.mathsmadeeasy.co.uk/gcsemathspapers-free.htm>

Instructions

Write your name and other details in the boxes above.

Answer all the questions

Take π to be 3.142

Information

Marks are shown in brackets for each question (2)

Calculators may be used

Advice

Don't spend too long on one question

Show all your working in calculations for full marks

You will get marks for method even if your answer is incorrect

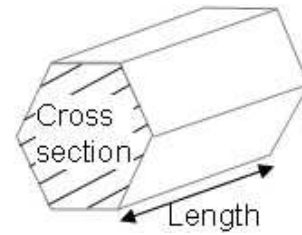
Leave a question until later if you cannot answer it

Materials needed for examination

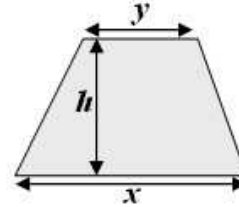
Ruler marked in centimetres and millimetres,
protractor, compasses, pen, pencil, rubber
Tracing paper may be used

Formulae Sheet

Volume of prism = area of cross section \times length



Area of trapezium = $\frac{1}{2}(x + y)h$



Authors Note

Every possible effort has been made to ensure that everything in this paper is accurate and the author cannot accept responsibility for any errors.

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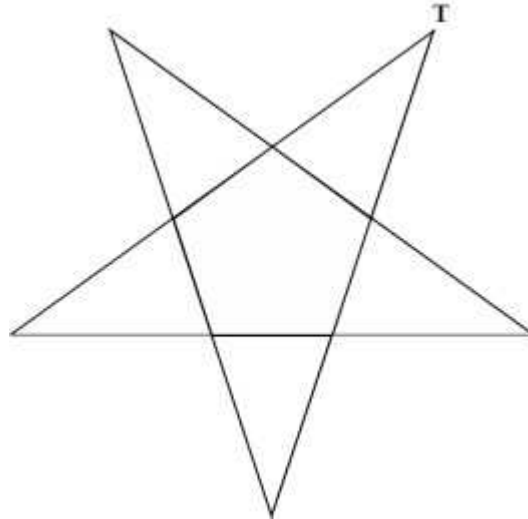
Question	Type of question	Marks
1	Nets, 3-D sketch	4
2	Prime factor tree, HCF, LCM	4
3	Areas	4
4	Basic line graph, mean, range	5
5	Number lines, decimal places, significant fig	4
6	Calculation	2
7	Two way table	5
8	Money conversion	4
9	cuboid co-ordinates	3
10	Simple algebra	3
11	Perimeter & algebra	4
12	Money calculation	3
12	Translation, reflection	4
13	Speed, distance calculations	4
14	Locus, angles	4
15	Map scale	2
16	Fraction, decimal, %	5
17	Pythagoras, circle area	5
18	Symmetry, translation, reflection	5
19	Algebra – factorise, expand, substitution	6
20	Use of calculator	7
21	Probability	3
22	Calculation	3
23	Simple interest	3
24	Trial & Improvement	4

Answer ALL questions.
Write your answers in the spaces provided.

You must write down all stages in your working.

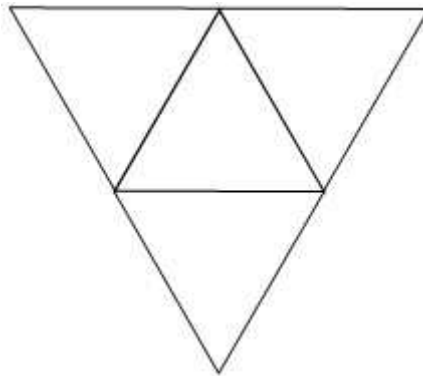
1. A net of a 3-D shape is shown below. It folds together to make the 3-D shape.
Four other vertices meet at T.

- a) Mark these four vertices with a letter T



(2)

- b) The diagram shows a net of a 3-D shape.
In the space below, draw a 3-D sketch of the shape.



(2)

2. a) Draw a prime factor tree for 168 and 40

b) Using your prime factor tree or otherwise work out the Highest Common Factor for 168 and 40 (2)

3. a) Work out the area of the rectangle below.

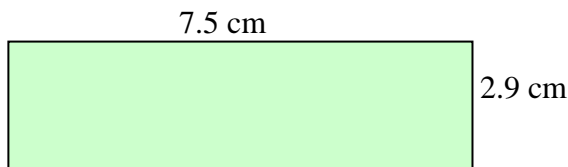


Diagram NOT drawn accurately

.....
(2)

.....cm²
(2)

A square is shown below with an area of 441 cm²

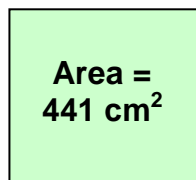
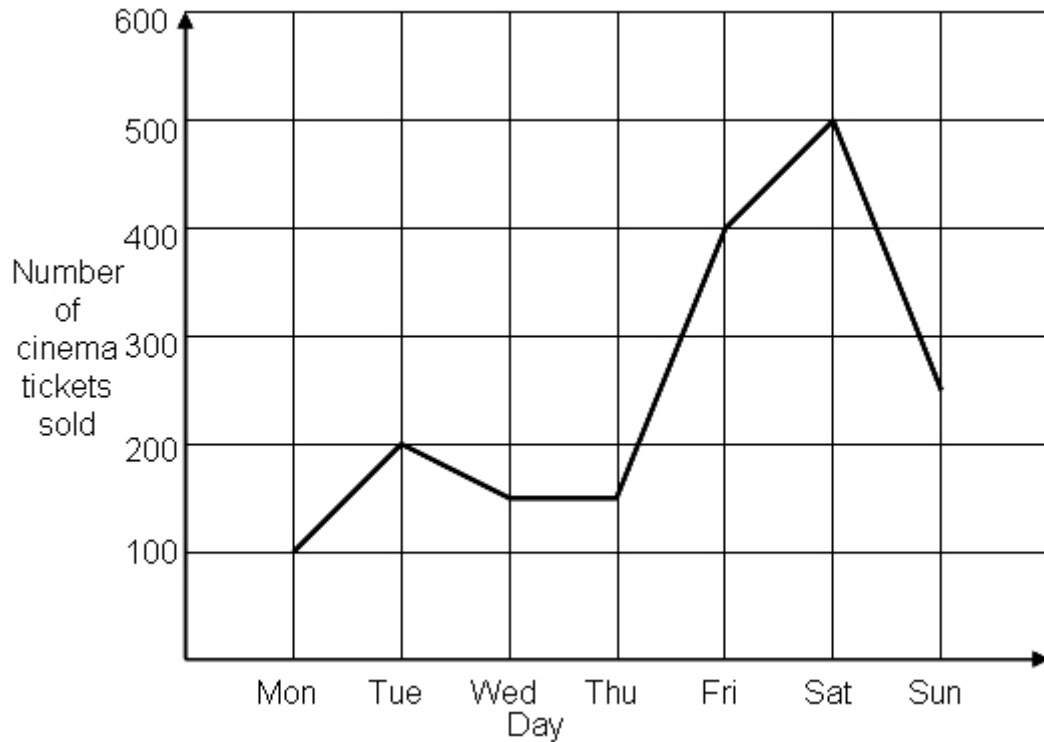


Diagram NOT drawn accurately

b) What is the length of one side of this square?

..... cm
(2)

4. The graph below shows the number of cinema tickets sold each day during a week



- a) What was the maximum number of tickets sold.
 tickets
(1)
- b) What was the mean number of tickets sold per day during the week
 tickets
(2)
- c) What was the range of the number of tickets sold during the week.
 tickets
(1)
- d) How many more tickets were sold on Saturday than Tuesday?
 tickets
(1)

5. a) What is 0.757

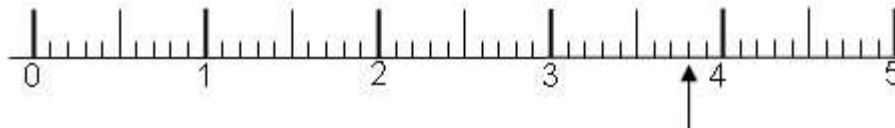
i) correct to 2 decimal places

.....
(1)

ii) correct to 1 significant figures

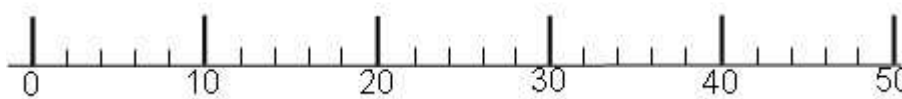
.....
(1)

b) What is the number marked below



.....
(1)

c) Mark the number 26 with an arrow on the line below



(1)

6. Mrs Smith went to a museum with five teenagers and an adult friend. It was £6.50 for an adult and £3.50 for each teenager. How much did it cost altogether to get in?

£.....
(2)

7. The table below shows how far it is between four towns (in miles).

Toddington			
41	London		
156	195	Grimsby	
163	202	68	Bradford

a) How far is it from Toddington to London.
miles
 (1)

b) Which two towns are the farthest apart?
 and
 (1)

Martin starts in Toddington
 He goes to Grimsby.
 Then he goes to Bradford.
 Then he returns back to Toddington.

c) How far has Martin gone?
miles
 (3)

8. David went to Greece.

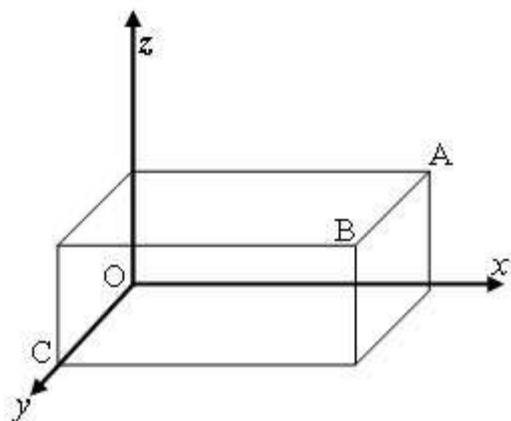
He changed £300 into Euros (€)
 The exchange rate was £1 = €1.15

a) How many Euros will he get?
 €.....
 (2)

When he came home he changed €19.25 back to pounds
 The exchange rate was now £1 = €1.10

b) How many pounds did he get?
 £.....
 (2)

9. A cuboid lies on the co-ordinate axes.



Distances in cm
Not drawn accurately

The point B has co-ordinates (7, 3, 4)

- a) What are the co-ordinates of the point A

.....
(1)

- b) What are the co-ordinates of the point C

.....
(1)

- c) What is the distance between A and B

.....cm
(1)

10. Simplify

a) $11p - 7p$

.....
(1)

b) $a \times a \times b \times 8$

.....
(1)

c) $(q + q + q) \times 2$

.....
(1)

11.

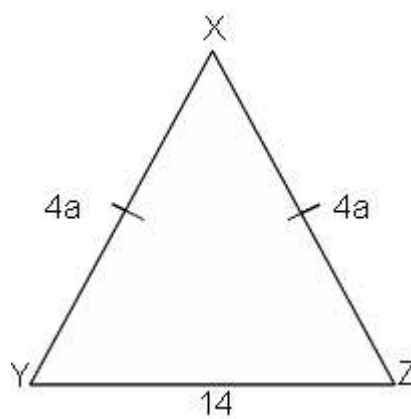


Diagram NOT
drawn accurately

In the diagram, above shows an isosceles triangle XYZ with measurements in centimetres.

$XY = 4a$

$XZ = 4a$

$YZ = 14$

a) Find an expression in terms of a , for the *Perimeter* of the triangle in its simplest form

.....
(2)

The perimeter of the triangle is 54 cm

b) Find the value of a

.....
(2)

12. Dileep went to the shops. His receipt is shown below. Complete the receipt

Receipt			
Item	Amount	Price each	Total for item
Bottles of orange juice	4	£1.20	£ 4. 80
Packets of crisps	3	£0.27	£.....
Pair of Jeans	3	£.....	£ 21.00
Pair of socks	3	£2.54	£.....
Total cost			£.....

(4)

13. a) David drove at 58 miles per hour for 7 hours.

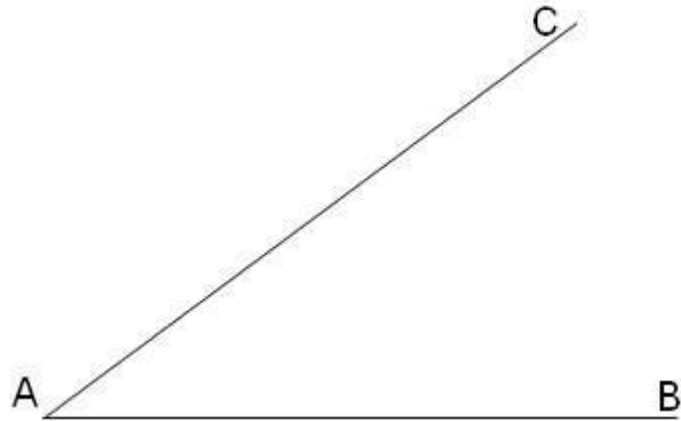
How far did he go?

.....miles
(2)

b) Connor ran 400 metres in 74 seconds.
Work out his average speed.
Write down all the figures on your calculator display.

..... metres per second
(2)

14. An angle BAC is shown below.



a) Using a compass and pencil construct a bisector for this angle.

(2)

b)

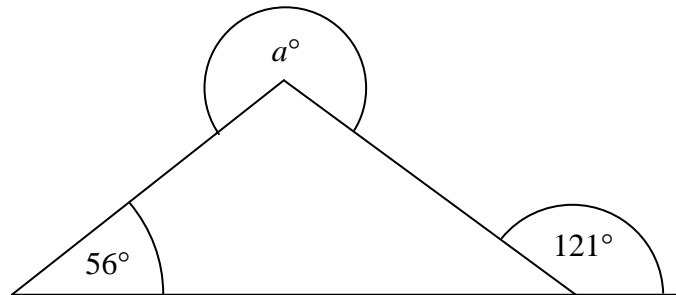
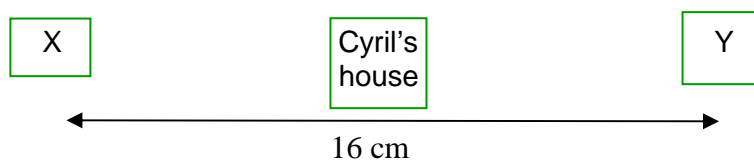


Diagram **NOT** accurately drawn

Work out the value of a .

$a = \dots\dots\dots$
(2)

15. A map is drawn to a scale of 1cm: 8km
 Two schools X and Y are 16 centimetres apart on the map.
 Cyril's house is exactly mid way between the schools.
 Work out the actual distance Cyril's house to X
 Give your answer in kilometres.



..... km
 (2)

16. What is $\frac{6}{20}$

i) as a fraction in its simplest form

..... (1)

ii) as a decimal

..... (1)

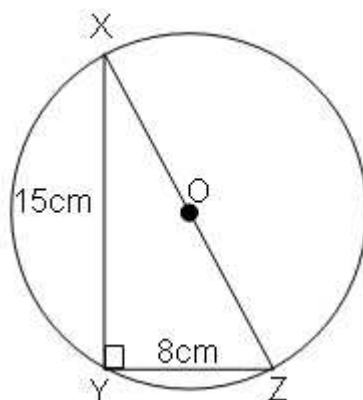
iii) as a percentage

..... (1)

iv) Work out $\frac{6}{20}$ of £300

..... (2)

17. The diagram below shows triangle XYZ with circle centre at O



X, Y and Z are points on the circumference. XZ is the diameter of the circle

$XY = 15\text{ cm}$ and $YZ = 8\text{ cm}$

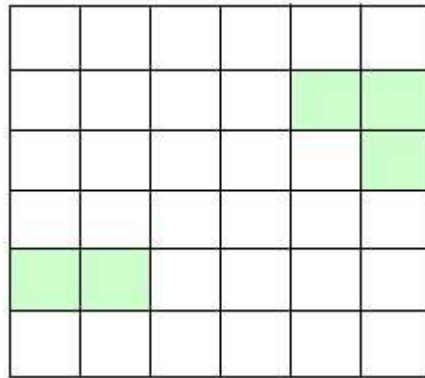
a) Work out the diameter XZ of the circle

.....cm
(3)

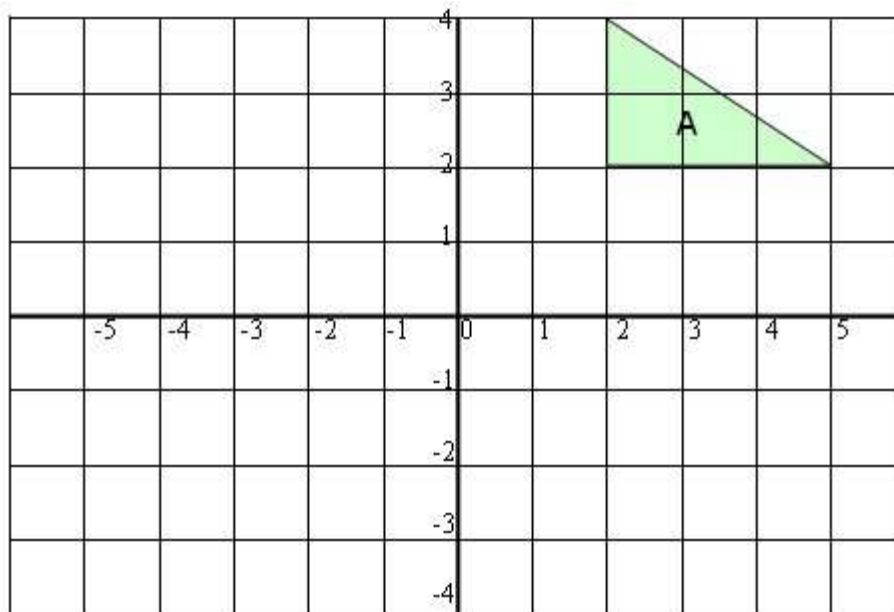
b) Work out the area of the circle correct to 3 significant figures

.....cm²
(2)

18. a) Shade one square to give this pattern a rotational symmetry of order 2. (1)



- b) Translate triangle A by $\begin{pmatrix} -6 \\ -5 \end{pmatrix}$. Label it B. (2)



- c) Reflect your translated triangle B in the y-axis. Label it C. (2)

19. a) Factorise $2y^2 + 4y$

.....
(2)

b) Expand $6(x - 2y)$

.....
(1)

c) Simplify $y^5 \times y^7$

.....
(1)

d) $p = 0.7ab^2$

Find the value of p when $a = 3$ and $b = 4$

$p =$
(2)

20. Use your calculator to work out

a) $\sqrt{(5.9 + 6.7)}$ to 2 decimal places

.....
(1)

b) πr^2 when $r = 4.25$ to 1 decimal place

.....
(1)

c) $\frac{1}{0.35^2}$ to 1 decimal place

.....
(1)

d) $\frac{16.5 \times 8.3}{2.9 \times 7.2}$

write down all the figures on your calculator display

.....
(2)

e) the cubed root of 343

.....
(1)

f) 6.4 cubed to 1 decimal place

.....
(1)

21. There are 20 coloured buttons in a bag

6 buttons are blue
10 buttons are green
4 buttons are red.

If you take a button at random from the bag

What is the probability that it is

a) a red button

.....
(1)

b) NOT a blue button

.....
(1)

c) a yellow button

.....
(1)

22. Jane paid £10.56 for 5 mp3 downloads and 2 CDs

If 6 mp3 downloads cost £7.68 how much is it for 1 CD.

.....
(3)

23. Sylvia gets 3.6% **simple** interest per year on her £4000.
How much will she have after 2 years.

£.....
(3)

24. The equation

$$x^3 - 7x = 4$$

Has a solution between 2 and 3.

Using trial and improvement find the solution to 1 decimal place.

Show all your working.

$$x = \dots\dots\dots$$

(4)

TOTAL FOR PAPER: 100 MARKS
END