

First Name	
Last Name	
Date	
Total Marks	/ 100 marks

MathsMadeEasy

GCSE Mathematics  
Non Calculator  
Foundation Tier  
Free Practice Set 6  
1 hour 30 minutes



Answers at:

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

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### Instructions

Write your name and other details in the boxes above.  
Answer all the questions  
Take  $\pi$  to be 3.142

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### Information

Marks are shown in brackets for each question (2)  
**Calculators may not be used**

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### Advice

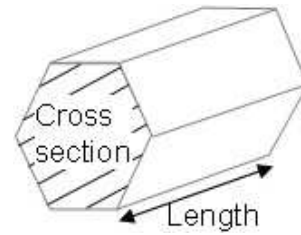
Don't spend too long on one question  
Show all your working in calculations for full marks  
You will get marks for method even if your answer is incorrect  
Leave a question until later if you cannot answer it

**Materials needed for examination**

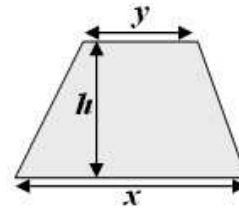
Ruler marked in centimetres and millimetres,  
protractor, compasses, pen, pencil, rubber  
Tracing paper may be used

## Formulae Sheet Foundation Tier

**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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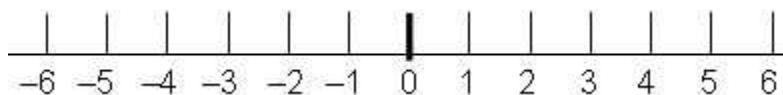
Question	Type of question	Marks
1	Number operations	2
2	Patterns/ sequences	4
3	Pictogram	4
4	Multiplication	2
5	Place ordering	4
6	Factors, multiples, prime number, square number	4
7	Writing Numbers, speed	5
8	Reading scales	4
9	Algebra – solve	4
10	Scales. construction	3
11	Mode, Median, Mean, reading graphs.	6
12	2 way table , percentages, fractions, probability	6
13	Drawing 3D shapes	2
14	Enlargement, Area	4
15	Probability	4
16	Co-ordinates	2
17	Unit conversion km to m kg to g	4
18	Algebra – simplify, expand, subject formulae	9
19	Time, percentages	4
20	Finding angles, alternate angle	3
21	BODMAS	3
22	Symmetry	3
23	VAT percentage, ratios	6
24	Algebra – forming equations	4
25	Fractions, add, multiply	4

Answer ALL questions.

Write your answers in the spaces provided.  
Do NOT use a Calculator

You must write down all stages in your working.

1. Use the number line to work out the following



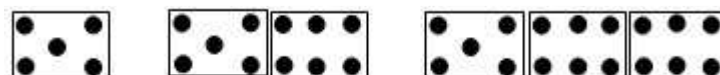
a)  $-2 - 3 =$

.....  
(1)

b)  $4 - 5 + 2 =$

.....  
(1)

2. Some dominos are arranged into three parts of a pattern as shown.



- a) How many faces will be in the fourth and fifth part?

4<sup>th</sup> ..... 5<sup>th</sup> .....  
(2)

- b) What is the expression in terms of  $n$ , for the total in pattern number  $n$ ?

.....  
(2)

3. The pictogram shows how many cups of tea and cakes were sold in a tea shop in a week.



a) How many teas were sold on Saturday?

.....  
(1)

Thirty teas and ten cakes were sold on Wednesday.

b) Complete the pictogram.

(1)

c) How many cakes were sold in the tea shop in the week?

.....  
(1)

d) How many teas were sold in the tea shop in the week?

.....  
(1)

4. Tiles are packed in boxes.

Each box has **25 tiles**.

There are **73 boxes**.

How many tiles are there in total?

.....  
(2)

5. Write these numbers in order of size.  
Start with the largest positive number.

a) 0.81 0.88 0.09 0.99 0.1

.....  
(1)

b) -5 5 2 -7 -1

.....  
(1)

c) 70% 0.72 3/5 3/4

.....  
(2)

6. From the list of numbers below:

12	15	30	39	81
----	----	----	----	----

a) What is the highest common factor?

.....  
(1)

b) Which one is a square number?

.....  
(1)

c) Which one is a multiple of 13?

.....  
(1)

d) Write down two prime numbers between 30 and 39

.....  
(1)

7. A space rocket weighs 1,320,500 pounds (lb) at launch.



a) What is 1,320,500 in words?

.....  
(1)

b) What is 1,320,500 correct to the nearest thousand.

.....  
(1)

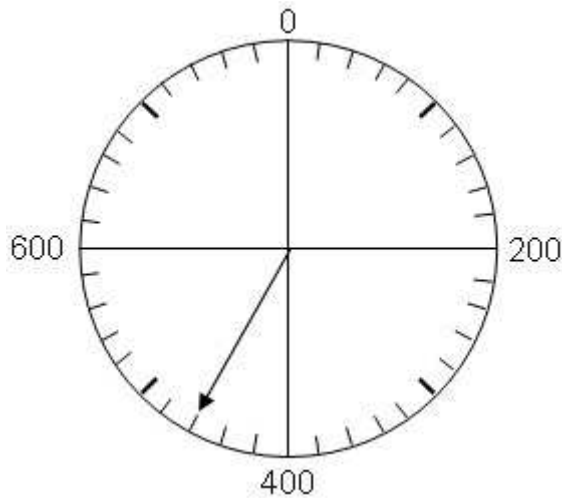
c) The rocket has a diameter of 3.77 m. What is this to the *nearest* metre?

.....  
(1)

d) The space shuttle reaches a height of 28 miles after 2 minutes.  
Calculate its average speed in miles per hour.

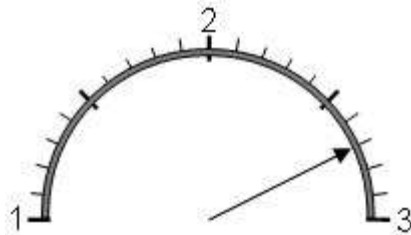
.....mph  
(2)

8. a) What is the number shown by the arrow.



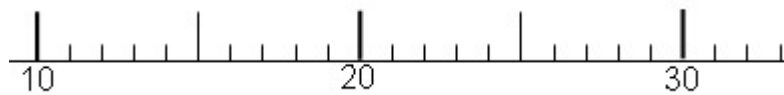
.....  
(1)

- b) What is the number shown by the arrow?



.....  
(1)

- c) Look for the number 28 on the number line.  
Mark it with an arrow (↑).



.....  
(1)

- d) Find the number 3.4 on the number line.  
Mark it with an arrow (↑).



.....  
(1)



9. Find the values of  $x$

a)  $5x - 7 = 18$

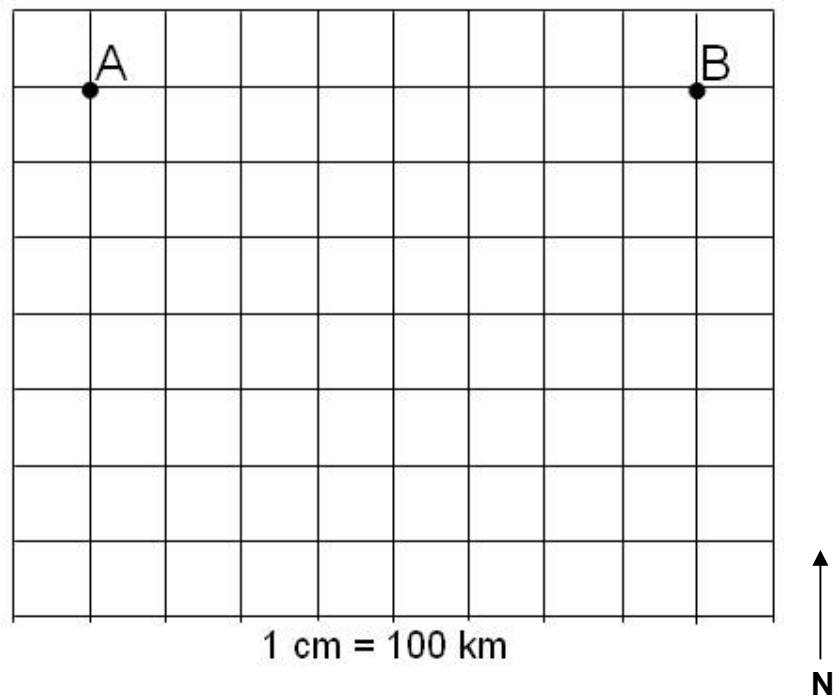
$x = \dots\dots\dots$   
(2)

b)  $19 + 2x = 9$

$x = \dots\dots\dots$   
(2)

10. The map below shows two points A and B. The scale is 1 cm = 100 km.

Point C is further south and is 750 km from A and 600 km from B



Use accurate construction to show point C on the map.

You **must** leave in your construction lines.

(3)

11. The table shows the average daytime winter temperature for days in a week.

Day	Mon	Tue	Wed	Thur	Fri	Sat	Sun
Temperature	7	4	4	5	3.5	3	6

a) What is the median temperature?

.....°C  
(1)

b) What is the mode temperature?

.....°C  
(1)

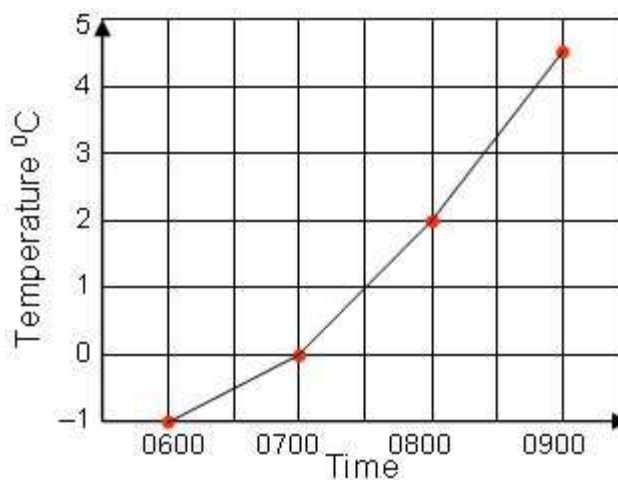
c) What is the mean temperature from Monday to Wednesday?

.....°C  
(1)

d) What is the difference between the temperature on Monday and Friday?

.....°C  
(1)

The temperature on winter's morning from 0600 to 0900 is shown below.



e) What was the temperature at 0900?

.....°C  
(1)

f) What was the temperature at 07.30?

.....°C  
(1)

12. There are **25 pupils** in a class.

The table shows information about KS3 test results in maths and science.

		Maths			
		Level 5	Level 6	Level 7	Level 8
Science	Level 5	3	2	2	0
	Level 6	2	5	2	0
	Level 7	0	3	4	2

a) How many pupils had the **same level** in both maths and science?

.....  
(1)

b) What *percentage* of the class achieved level 7 in maths?

.....  
(2)

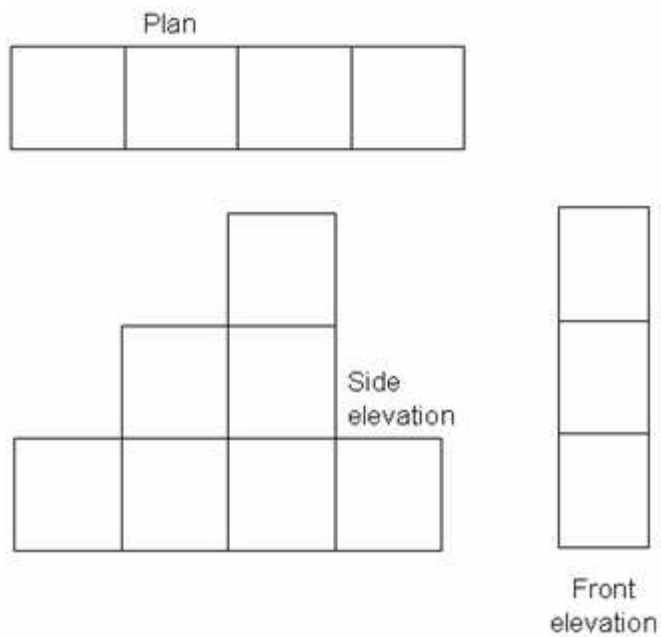
c) What *fraction* of the class achieved level 6 in maths AND science  
Give your answer in its lowest terms.

.....  
(1)

d) If one pupil was selected randomly from the class, what is the **probability** that they achieved **level 7 or above** in maths.  
Give your answer in its lowest terms.

.....  
(2)

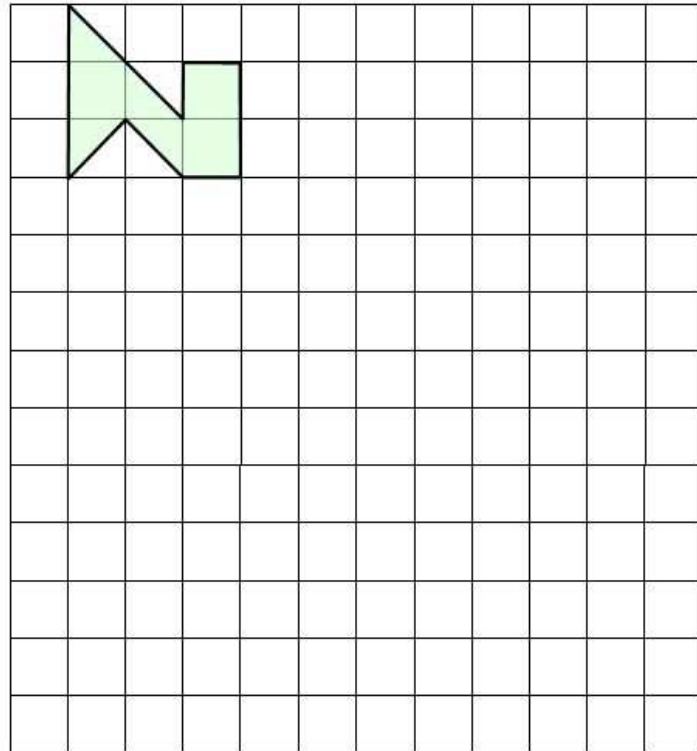
13. The plan, front elevation and side elevation of a 3-D shape are shown below.



Draw a picture of the 3-D shape

(2)

14. a) Enlarge the shape shown on the grid below by a scale factor of 3



(2)

- b) What is the *AREA* of the enlarged shade you have drawn?

.....  
(2)

15. Stuart planted some vegetable seeds.  
The table shows in which months the vegetables were ready to harvest.

		Month			
		July	August	Sept	Oct
Type of bulb	Beetroot	✓	✓	✓	✓
	Broccoli		✓	✓	
	Sprouts				✓
	Carrots	✓	✓	✓	✓
	Runner Bean			✓	

If Stuart puts one of each type of seed in a bag and took out a seed without looking.

- a) Write down the probability that he will take a carrot seed.

.....  
(1)

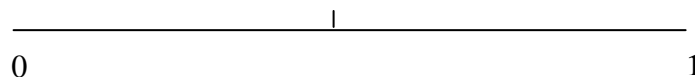
- b) What is the probability that it he will NOT take a carrot seed?

.....  
(1)

- c) What is the probability that he will take a seed that is ready to harvest in **July**?

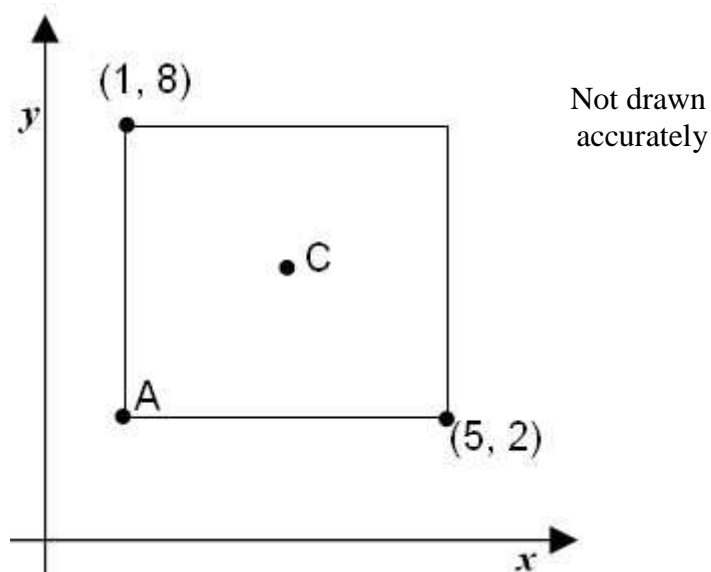
.....  
(1)

- d) On the probability scale, mark with a cross (×) the probability that he will take a seed that is ready to harvest in **September**.



(1)

16. A rectangle is drawn on an x-y axis below with co-ordinates for opposite corners.



What are the coordinates of point A?

A is ( ..... , ..... )  
(1)

Point C is halfway between the sides of the rectangle

What are the coordinates of point C?

C is ( ..... , ..... )  
(1)

17. a) What is 25 kilometres in metres

.....m  
(1)

- b) What is 2.5 metres in centimetres?

.....cm  
(1)

- c) What is  $\frac{1}{4}$  kilogram in grams?

.....grams  
(1)

- d) What is 2.862 grams correct to 1 decimal place?

.....grams  
(1)



18. a) Simplify  $10x + q - 6x - 3q$

.....  
(1)

b) Simplify  $5s + 7y - 6s - 6y$

.....  
(1)

c) Simplify  $6x^2 - 5x^2$

.....  
(1)

d) Expand and simplify:

$$3(x + y) + 4(3x - 2y)$$

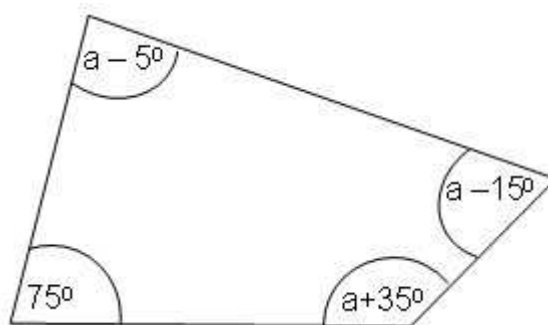
.....  
(2)

e) Make b the subject of the formula

$$a = 4b + 3c$$

.....  
(2)

f) Four angles are shown in the quadrilateral below.



Write an equation for the total angles in the quadrilateral in terms of a.

.....  
(2)

19. Laura took the train to see her mother.  
The timetable said the train should arrive at 18: 40  
But it was delayed and arrived 1 hour 30 minutes later than expected.

a) At what time did her train arrive? Give your answer in terms of the 24 hour clock

.....  
(1)

The train company gave its customers some compensation for the delays. The compensation was worked out using the rule below

Calculate 20% of the amount spent  Then round this <b>up</b> to the next whole number of pounds
---

Laura spent £14.80

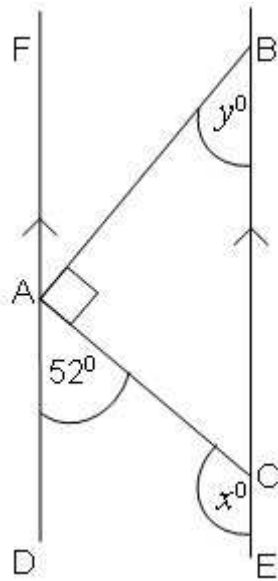
b) (i) What is 20% of £14.80

£.....

ii) Round this up to the next whole number of pounds.

£.....  
(3)

20. The diagram shows two parallel lines DF and EB and a triangle ABC.



Work out the sizes of angles  $x$  and  $y$

$x = \dots\dots\dots^\circ$   
(1)

Explain how you got your answer

.....  
(1)

$y = \dots\dots\dots^\circ$   
(1)

21. Work out:

a)  $3 \times 5 - 1$

.....  
(1)

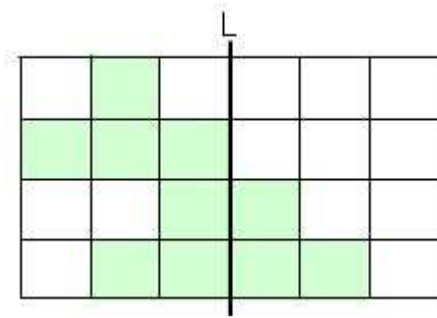
b)  $3 - 5 \times 1$

.....  
(1)

c)  $-3 \times (5 - 1)$

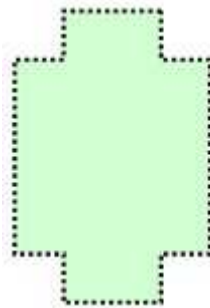
.....  
(1)

22. Look at the squares that been shaded on the grid below.



a) Complete the shading to make a shape with a line of symmetry **L** shown.

(1)



b) Draw **all** the lines of symmetry on the shape above.  
How many are there?

.....  
(1)

c) What is the rotational symmetry for the shape above?

.....  
(1)

23. A mobile phone cost £120 *excluding* VAT.  
VAT on the mobile phone is 15 %

a) How much does the mobile phone cost *including* VAT?

£.....  
(2)

b) Text messages cost 8p each.  
In one month Sunita sent 150 text messages.  
Sunita gets 100 free text messages per month.  
How much did Sunita spend on text messages?

£.....  
(2)

c) Sunita sent 150 text messages to her friends Bill, Jack and Ram in the ratio 1 : 4 : 5  
How much did she send to each person?

Bill ..... Jack ..... Ram .....  
(2)

24. Kathleen is  $x$  years old.

Her daughter Jane is half Kathleen's age.

a) Write down an expression, in terms of  $x$ , for Jane's age.

.....  
(1)

The total age of both Kathleen and Jane is 63 years.

b) Write an equation for their total age in terms of  $x$ .

.....  
(1)

c) Solve the equation you wrote above (b) to find  $x$  (Kathleen's age)

.....years  
(2)

25. a) Work out  $1\frac{3}{5} + 2\frac{5}{7}$

Give your answer as a fraction in its simplest form.

.....  
(2)

b) Work out  $\frac{3}{5} \times \frac{5}{7}$

Give your answer as a fraction in its simplest form

.....  
(2)

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**TOTAL FOR PAPER: 100 MARKS**  
**END**