

First Name	
Last Name	
Date	
Total Marks	/ 100 marks

MathsMadeEasy

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



Dedicated to my Mother, Sylvia (1930-1997)

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

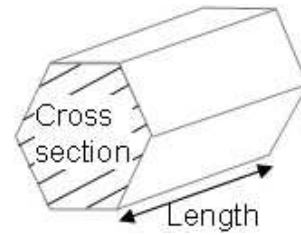
Leave a question until later if you cannot answer it

Materials needed for examination

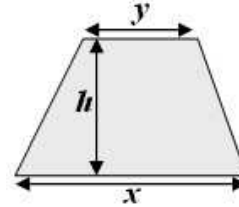
Ruler marked in centimetres and millimetres,
protractor, compasses, pen, pencil, rubber
Tracing paper may be used

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	Scale reading	2
2	Number operations	6
3	Multiples, factors, square numbers, HCF	4
4	Money calculation	3
5	3-D co-ordinates, loci	3
6	Decimal places , significant figures	2
7	Construction	3
8	Money calculation	2
9	3-D Shapes	2
10	HCF, prime factor tree, reciprocal	7
11	Calculator skills: Percentages, $\sqrt{\quad}$, cubed numbers	3
12	VAT calculation	3
13	Conversions – Kg, cm, time	7
14	Bar chart	3
15	Probability	5
16	Algebra	12
17	Co-ordinates, area	5
18	Transformations	4
19	Money conversion	4
20	Money calculation	3
21	Simple interest	3
22	Rotation, Pythagoras theorem	4
23	Pie chart	2
24	Calculator use, standard form	5
25	Quadratic equation	4

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

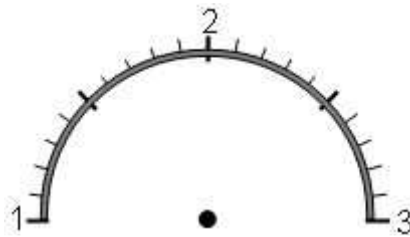
You must write down all stages in your working.

1. The dial below shows how fast a car is travelling.

a) If the speed limit is 70 mph, *how much below* the speed limit is the car travelling?



.....mph
(1)



b) Find the value 2.7 on the scale above and mark it with an arrow

(1)

2. a) Use your calculator to work out

$$14.8 \times (3.6 - 1.5)$$

.....
(2)

- b) Write your answer to a) correct to 1 decimal place

.....
(1)

- c) Use your calculator to work out

$$35 \div (3.7 - 1.2)^2$$

.....
(2)

- d) Write your answer to c) correct to 1 significant figure

.....
(1)

3. From this list of numbers : **11 17 22 28 36 88** write:

a) A multiple of 7

.....
(1)

b) A factor of 44

.....
(1)

c) A square number

.....
(1)

d) What is the highest common factor of 11 and 88

.....
(1)

4 Matthew has £50 birthday money to spend on Itunes. Each music track costs £0.79.

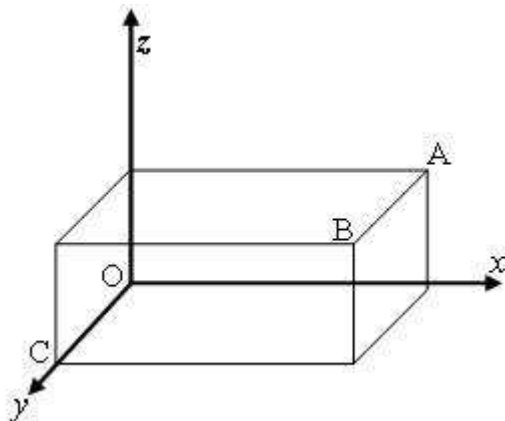
a) How many tracks can he buy for £50?

.....
(2)

b) How much money in pence does he have left?

.....pence
(1)

5. a) A cuboid lies on the co-ordinate axes as below



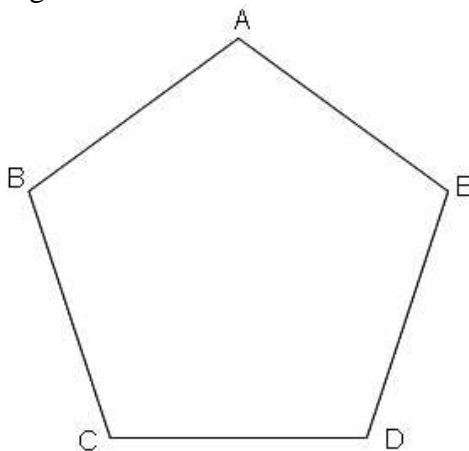
Not drawn accurately

The point B has co-ordinates (5, 3, 2)

What are the co-ordinates of the point A?

.....
(1)

- b) ABCDE is a pentagon



Shade the area inside the pentagon which is more than 3 centimetres from A.

(2)

6. What is 0.257

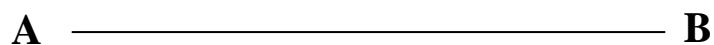
i) correct to 1 decimal place

.....
(1)

ii) correct to 2 significant figures

.....
(1)

7. A horizontal line AB is drawn below



Using a compass and pencil construct an **equilateral** triangle with line AB as the base.

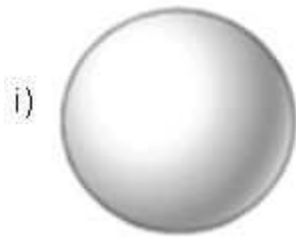
(3)

8. At the supermarket the total cost for one DVD and three CDs was £17.25
The DVD cost £6.75. What was the price for **one** CD?

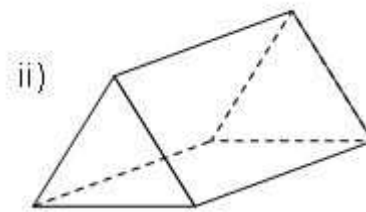
1 DVD	£6.75
3 CDs	
Total	£17.25

1 CD costs £.....
(2)

9. What is the mathematical name for these shapes?



.....



.....

(2)

10. a) What is the Highest Common Factor (HCF) of 24 and 60

.....
(2)

b) Draw a prime number tree for 112.

c) Hence express 112 as a product of its prime factors. (2)

..... (1)

d) 11 and 13 are both prime numbers. What is the next prime number?

.....
(1)

e) What is the reciprocal of 100?

.....
(1)

11. Using your calculator work out

a) 43% of £150

£.....
(1)

b) the square root of 306.25

.....
(1)

c) 7.4 cubed. Write all the numbers on your calculator display

.....
(1)

12) David buys a mobile phone for £90. VAT is 17.5%.
What is the total cost for the phone including VAT?

.....
(3)

13. Calculate:

a) How many kilograms (kg) is 2500g

.....
(1)

b) How many millimetres (mm) is 6.6cm

.....
(1)

c) 1 mile = 1.6 km. How many miles is 28 km?

.....
(2)

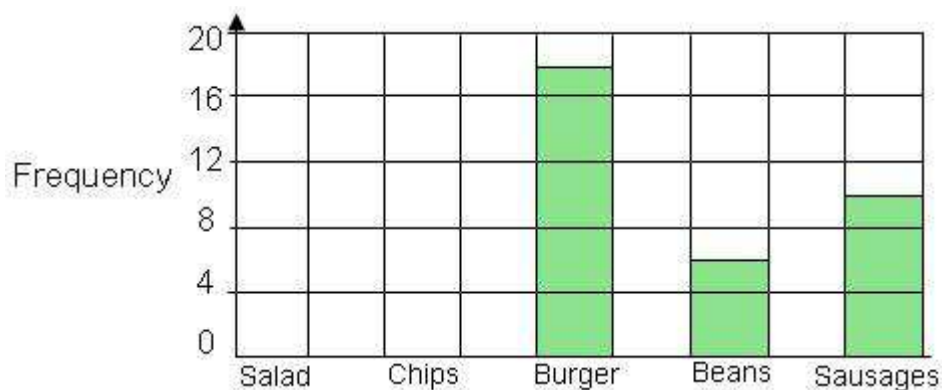
d) How many hours and minutes is it from 9.40am to 1.25pm?

.....
(2)

e) What is 5.25 hours in minutes?

.....
(1)

14. Cyril carried out a survey of choices for school meals. He plotted the information on the bar chart below



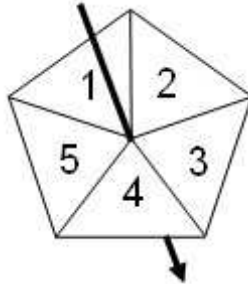
a) How *many more* students chose burgers than sausages?

.....
(1)

b) 6 students chose salad and 14 chose chips.
Complete the bar chart

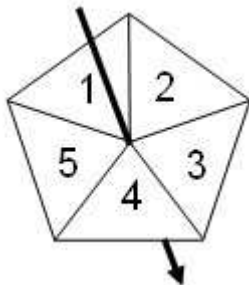
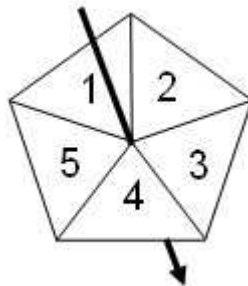
(2)

15. a) What is the probability of getting a score of 3 or more on a 5-sided spinner?



.....
(1)

- b) Nadine used two spinners for a game.
He added the scores on both spinners to get a total score
Complete the table showing all the total score combinations.
The first one has been done for you.



	1	2	3	4	5
1	2				
2					
3					
4					
5					

- c) What is the probability of getting a total score of 7 or more from the spinners?
(1)

.....
(2)

- d) From a bag of 8 blue buttons, 12 green buttons and 5 red buttons what is the probability of taking a red button?

.....
(1)

16. a) Simplify $f + 3g + 4f - g$

.....
(1)

b) $y = 3x + 6$ What is the value of x when $y = 24$

.....
(2)

c) Factorise $3t - 12$

.....
(1)

d) Expand $4z(z - 3)$

.....
(1)

e) Expand and Simplify $(y + 5)(y + 4)$

.....
(2)

f) Solve $5(4x - 4) = 5(2x + 9)$

.....
(2)

g) Make z the subject of the formula

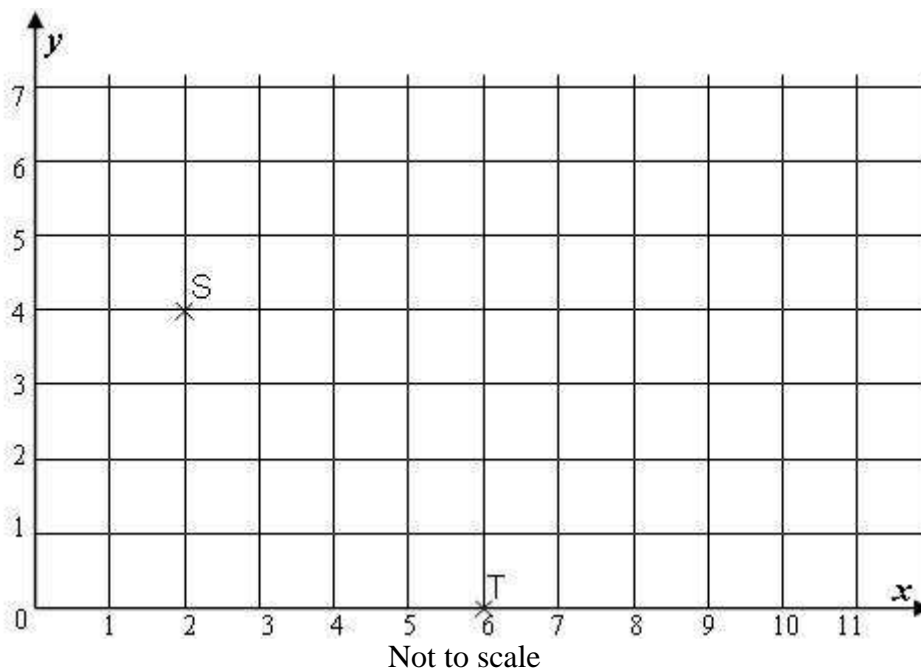
$$2x = 4z + 3y$$

.....
(2)

h) Simplify $\frac{y^9}{y^3}$

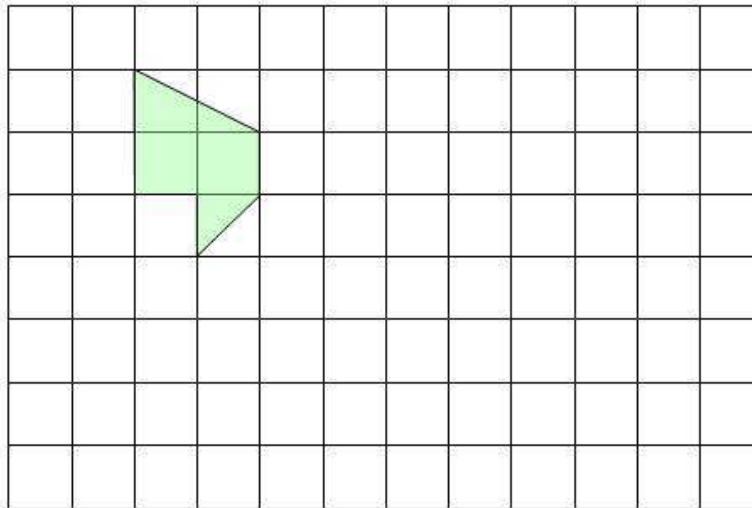
.....
(1)

17. Points S and T are shown on the centimetre square grid below



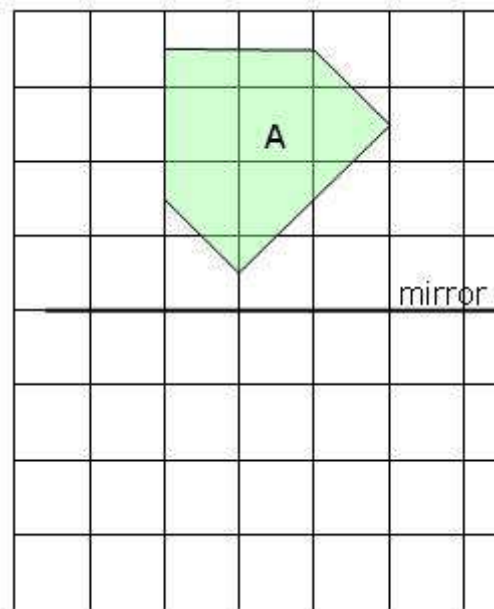
- a) What are the co-ordinates of point S
- (.....,)
- (1)
- b) Draw a line between S and T. Find the mid-point between S and T and label it M. What are the co-ordinates of the point M?
- (.....,)
- (1)
- c) Mark with a cross and label the point U at the co-ordinates (10, 4)
- (1)
- d) What is the area of the triangle made by connecting the points S, T and U?
-cm²
- (2)

18.



- a) Enlarge the shape shown above by a factor of two

(1)



- b) Draw a line of symmetry on the shape labelled A above

(1)

- c) Reflect shape A in the mirror line shown. Label it B

(1)

- d) What is the order of rotational symmetry for shape A?

.....
(1)

19. Jenny changed £200 into Australian dollars (Aus\$)
The exchange rate was £1 = Aus\$2.45

a) How many Australian dollars is that

Aus\$.....
(2)

On her return she changed Aus\$42.35 back to pounds (£)
The exchange rate was now £1 = Aus\$2.42

b) How many pounds (£) did she get?

£.....
(2)

20. For her wedding, Laura bought 8 birdcages and 6 metres of material.
The total cost was £109.98.
Each birdcage cost £8.79.
Find the cost of each metre of material.

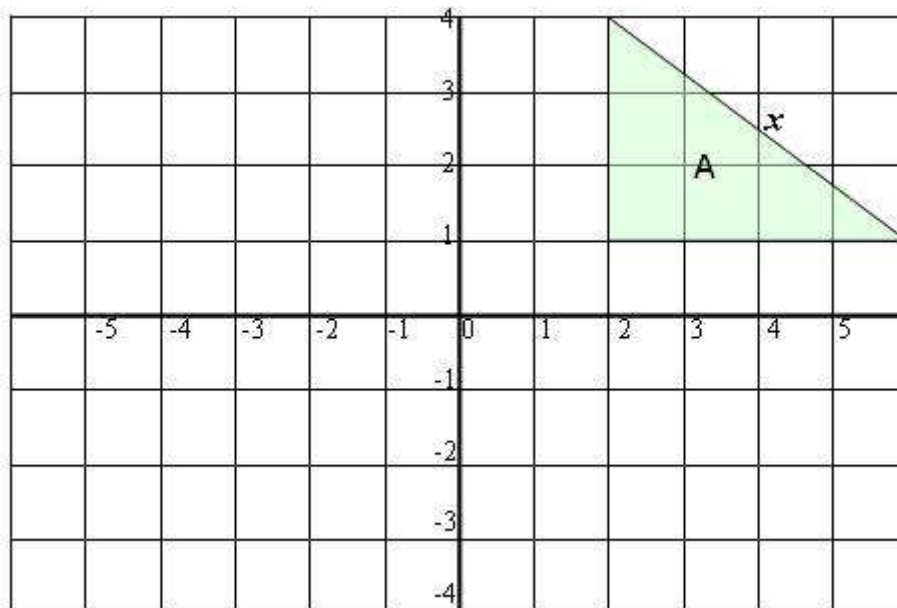


.....
(3)

21. A bank pays 5.6% **simple** interest per year on £6000.
How much interest would you get after two years.

£.....
(3)

22. The triangle A is shown on a centimetre square grid below.



a) Rotate triangle A by 180° about (0, 0). Label it B.

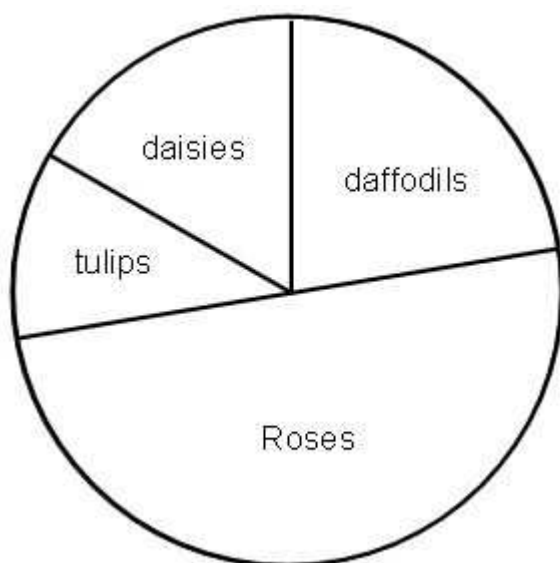
(2)

b) Calculate the length of the side x of the triangle.

.....cm
(2)

23. A survey of 90 people's favourite flowers for Valentine's day is shown in the accurate pie chart

Diagram **accurately**
drawn



Use the pie chart to complete the table.

Favourite flower	Frequency	Angle
Roses	45	180°
Tulip		
Daffodil	20	
Daisy		
Total	90	

(2)

24. What is

a) $\sqrt{(4.5 + 7.8)}$ to 2 decimal places

.....
(1)

b) πr^2 when $r = 3.25$ to 1 decimal place

.....
(1)

c) $\frac{1}{0.25^2}$

.....
(1)

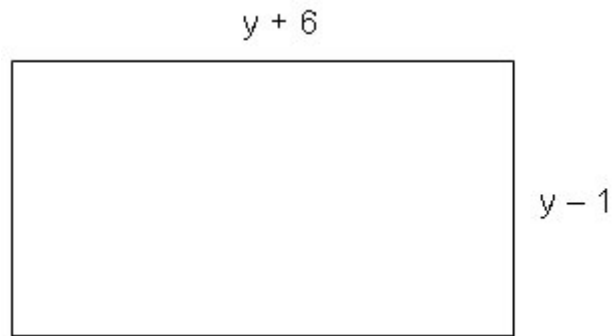
d) What is 7×10^4 as an *ordinary number*

.....
(1)

e) What is 0.000046 in *standard form*

.....
(1)

25.



a) Show that the area A of the rectangle above is $A = y^2 + 5y - 6$

.....
(2)

b) Express the perimeter of the rectangle in terms of y

.....
(2)

TOTAL FOR PAPER: 100 MARKS
END