First Name	
Last Name	
Date	
Total Marks	/ 100 marks

MathsMadeEasy

GCSE Mathematics

Calculator
Foundation Tier
Free Practice Set 6
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 not be used

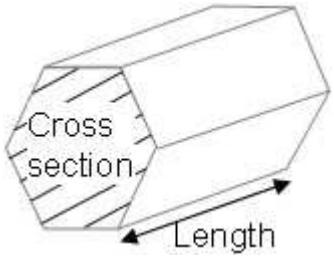
Advice
Don't spend too long on one question
Show all your working in calculations for full marks
You will get marks for method even if your answer is incorrect
Leave a question until later it you cannot answer it

Materials needed for examination

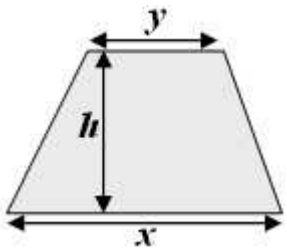
Ruler marked in centimetres and millimetres, protractor, compasses, pen, pencil, rubber
Tracing paper may be used

Formulae Sheet

Volume of prism = area of cross section × 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.

Question	Type of question	Marks
1	Metric units	3
2	Number operations	5
3	Reflection, translation	4
4	Tally, frequency	4
5	Bar chart, mean	4
6	Volume, plan	4
7	Index laws, area-finding side	4
8	Money conversion	4
9	Measure line, using protractor, construct bisector	4
10	Calculation, scale reading	4
11	Decimal places , significant figures	3
12	VAT percentage calculation	3
13	Calculator skills:, πr^2 , $\sqrt{}$, cubed numbers	4
14	Table and Rule	7
15	Algebra	7
16	Area, perimeter	8
17	Money calculation	3
18	Stem leaf, median, range	4
19	Reciprocal, fractions, ratio	4
20	Trial and improvement	4
21	Pythagoras theorem	4
22	Prime factor tree	2
23	Reciprocal, cm^2 to m^2 km to miles	3
24	Pie chart	4

1. Write a metric unit on each dotted line in the table below:
The first one has been done.

The length of a finger	9 centimetres
The volume of milk in a glass	300 ……..
The length of a car	3.4 ……..
The weight of a bag of potatoes	2 …….

(3)

2. **a)** Use your calculator to work out

$$24.9 \times (2.5 - 1.4)$$

.....

(2)

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

.....

(1)

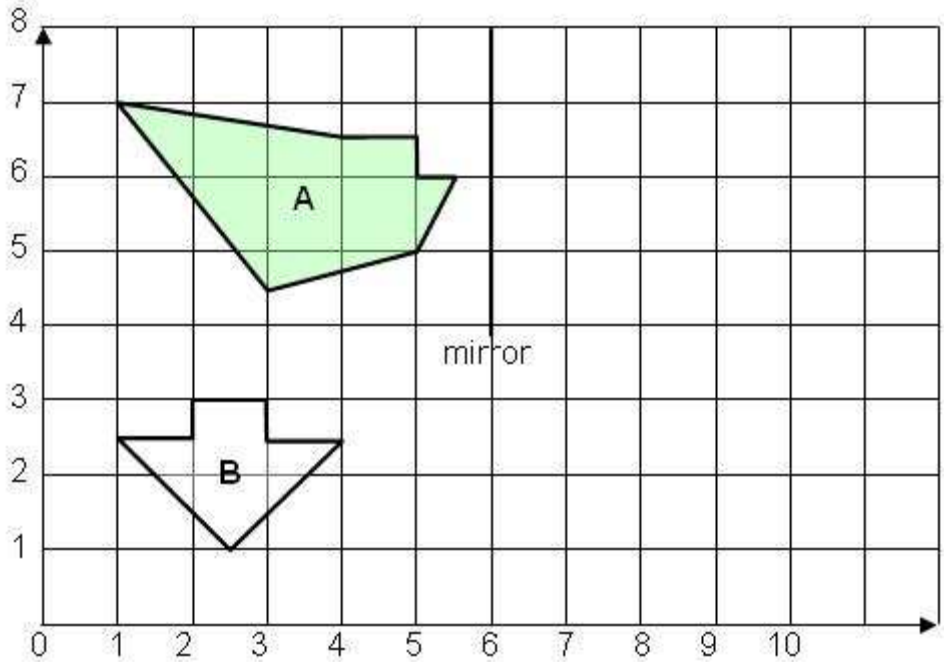
c) Use your calculator to work out

$$45 \div (3.9 - 1.4)^2$$

.....

(2)

3.



a) Reflect the shape A in the mirror line. Label it M

(2)

b) Translate triangle B by $\begin{pmatrix} +7 \\ -1 \end{pmatrix}$. Label it T.

(2)

4. Riona carried out a survey of her friends' favourite website as below:

Facebook	Bebo	Twitter	Facebook	YouTube
Myspace	Facebook	YouTube	Facebook	Bebo
Twitter	Facebook	YouTube	Facebook	YouTube
YouTube	Myspace	Facebook	Facebook	Bebo

a) Complete the table to show Riona's results.

(2)

website	Tally	Frequency
Facebook		
Myspace		
Twitter		
Bebo		
You Tube		

b) How many of Riona's friends liked Bebo?

.....

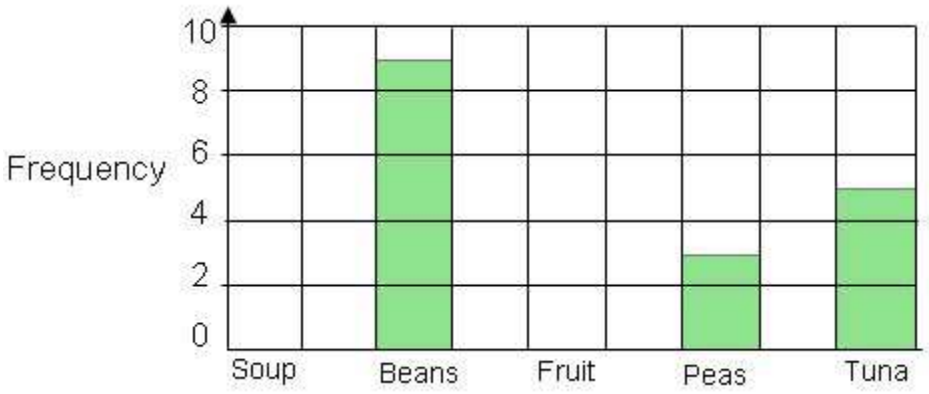
(1)

c) What percentage of Riona's friends liked Bebo?

.....

(1)

5. Amy counted the tins of food in her kitchen.
She plotted the information on he bar chart below.



a) How ***many more*** tins of beans than peas did she have?

.....

(1)

b) She counted five tins of soup and three tins of fruit.
Complete the bar chart

(2)

c) Amy needed to make sandwiches. One tin of Tuna would make six sandwiches.
How many sandwiches could she make with the tins she had?

.....

(1)

6. Nina measures her tent. Here are her measurements:

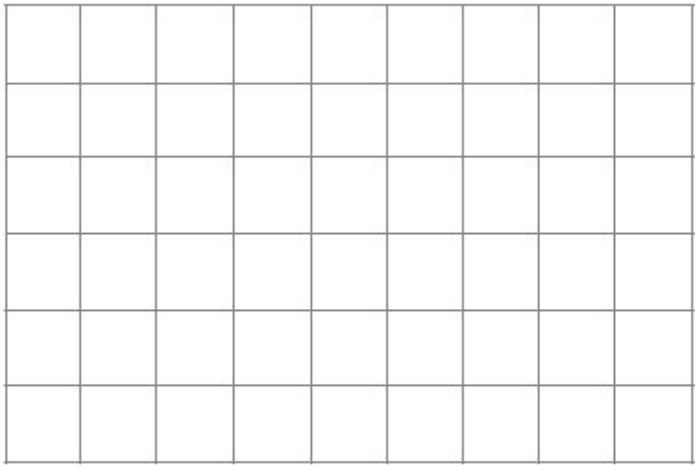
Height = 1.8 metres
Width = 1.75 metres
Length = 3.5 metres

a) Calculate the ***volume*** of her tent to 1 decimal place

…….…… m^3

(2)

b) On the centimetre grid below make an accurate drawing of a **plan** of her tent.
Use the scale of **2 cm equal 1 metre**



(2)

7. As a power of y what is

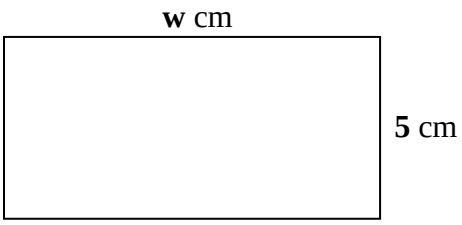
a) $y^3 \times y^2$

.....
(1)

b) $y^8 \div y^4$

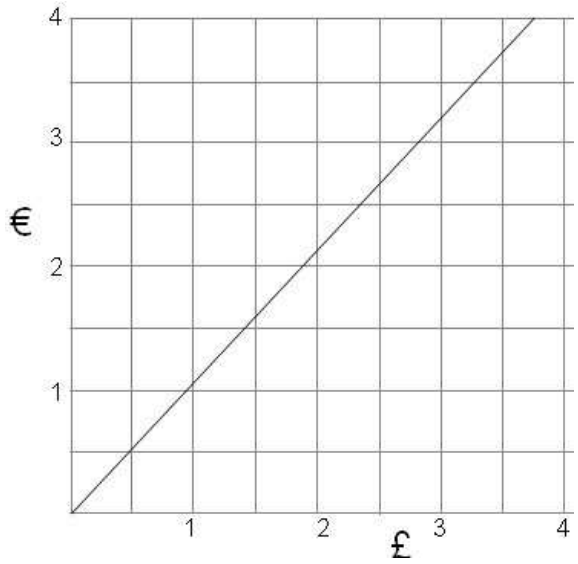
.....
(1)

c) The area of the rectangle below is 45 cm^2
Calculate the length of side w



w =.....
(2)

8. The graph below can be used to convert between pounds and Euros.



a) Laura says one euro is worth more than one pound.
Laura is wrong
Using the graph explain why

……..……..……

.....

(1)

b) What is £3 in Euros (€)?

€……..……

(1)

c) What is €4 Euros in pounds (£)

£……..……

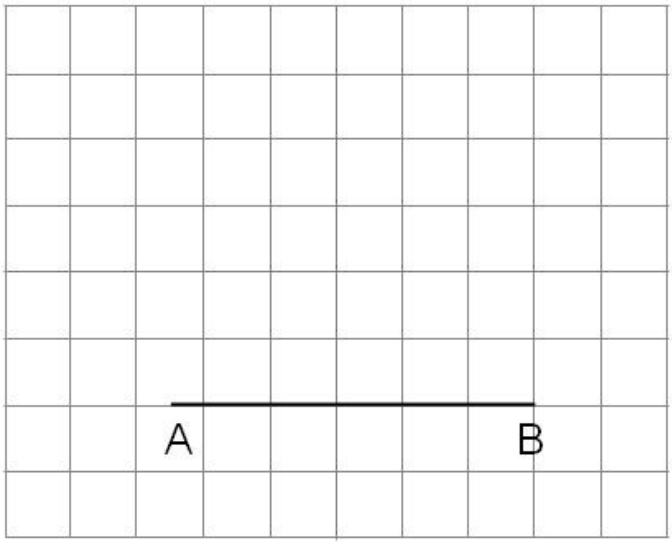
(1)

d) What is £300 in Euros?

€……..……

(1)

9. On the 1 cm grid below, line AB has been drawn.



a) Measure the length of the line AB

.....

(1)

b) Using a protractor draw an angle of 60^0 at point A.

(1)

c) Using a compass **bisect** the 60^0 angle from b)
You must show your construction lines.

(2)

10. Matthew put 30 litres of petrol in his car. It cost £31.80.

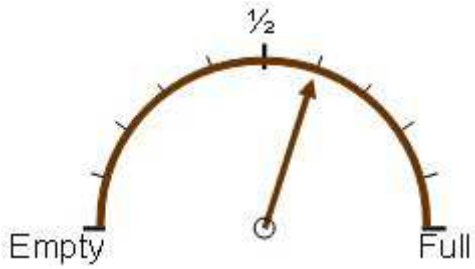
a) How much was the cost of petrol per litre?

£.....

(2)

When Matthew's petrol tank was full it contained 45 litres of petrol.

b) After using his car for a week, Matthew's petrol gauge showed the reading below. How much petrol was left in the petrol tank?



.....

(2)

11. What is 1.469

a) correct to 1 decimal place

.....

(1)

b) correct to 2 decimal place

.....

(1)

c) correct to 2 significant figures

.....

(1)

12. Logan bought a webcam for £26.40. In the sale it was reduced by 45%.
How much did Logan pay for the webcam?

.....
(3)

13. Using your calculator work out

a) πr^2 when r = 2.5 cm. Give your answer to 1 decimal place

.....cm^2
(2)

b) the square root of 96.04

.....
(1)

c) 2.4 cubed. Write all the numbers on your calculator display

.....
(1)

14. Sylvia hired some tableware for a tea party
The prices for each item are shown in the table below

a) Complete Sylvia's bill for hiring the tea set.

Item	Cost each	Quantity	Total cost (£)
Cups	£0.29	……..	£ ……..
Saucers	£0.16	……..	£1.44
Tea pot	£2.65	3	£7.95
Sugar bowl	£0.75	2	£1.50
Milk jug	£0.86	3	£ ……..
		Total	£16.08

(3)

The cost of delivery for these items is worked out using the formula:

Cost of delivery = Distance to customer (miles) × £0.40 + £5

The distance to a customer is 27 miles.
b) Work out how much the delivery cost is in pounds

£…….
(2)

A customer paid £17.80 for the delivery cost.
c) Work out the distance to the customer

…….…….miles
(2)

15. **a)** Simplify $5b + 7a + 3b - 9a + b$

.....

(1)

b) Simplify $a + a \times a$

.....

(1)

c) $c = 5a - 6b$ What is the value of c when $a = 6$ and $b = 3$

.....

(2)

d) Expand and Simplify $(y + 7)(y + 3)$

.....

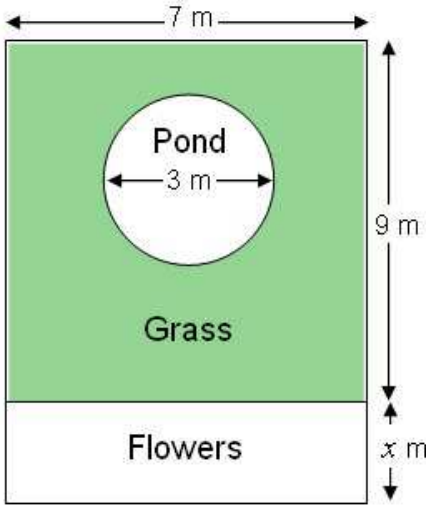
(2)

e) Simplify $2a^2 \times a$

.....

(1)

16. The diagram below shows a plan of a rectangular garden with measurements in metres.
There is a circular pond and an area for flowers.



Not accurately drawn

a) Work out the area of the circular pond to 2 decimal places

.....m^2

(1)

b) Work out the area of the rectangle covered by grass to 1 decimal place

..... m^2

(2)

c) Express the longest side of the garden in terms of x.

.....m

(1)

d) Express the perimeter of the garden in terms of x.
Give your answer in its simplest form.

.....

(2)

The perimeter of the garden is 40 metres.

e) Find the value of x.

x =.....

(2)

17. Laura bought 25 cups and 8 plates.
The total cost was £35.07.
Each plate cost £1.79.
Find the cost of <u>each cup</u>.

£.....

(3)

18. A pupil recorded the length of **19 pencils** in centimetres.

The stem-and-leaf diagram shows the results.

13.3	13.4	15.5	15.9	15.0	13.8	14.4	14.1
14.2	14.3	13.7	14.4	14.5	15.3	14.8	15.2
14.9	13.7	14.7					

a) In the space below, draw a stem and leaf diagram to show these times.
Show the key.

(2)

b) What is the median pencil length?

……cm
(1)

c) What is the range of pencil lengths?

……cm
(1)

19. a**)** What is the reciprocal of 5?

……
(1)

b) Work out

$$\frac{2}{7} - \frac{5}{21}$$

……
(2)

c) Share 21 in the ration 1:2

……
(1)

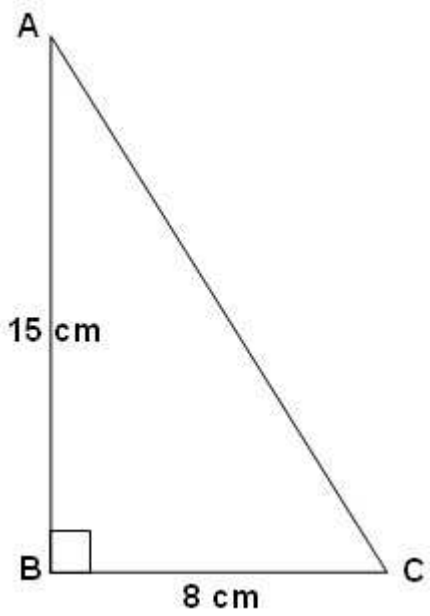
20. The equation

$$x^3 - 4x = 9$$

has a solution between 2 and 3
Use a trial and improvement method to find this solution.
Give your answer correct to 1 decimal place.
You must show **all** your working.

x = ... **(4)**

21. ABC is a right angled triangle with side AB = 15 and side BC = 8 cm



a) Work out the length of side AC

.....cm
(2)

b) Work out the area of the triangle.

.....cm^2
(2)

22. Draw a prime number tree for 112.

(2)

23. Calculate**:**

a) Convert $3m^2$ to cm^2

.....

(2)

b) 1 mile = 1.6 km. How many miles is 48 km?

.....

(1)

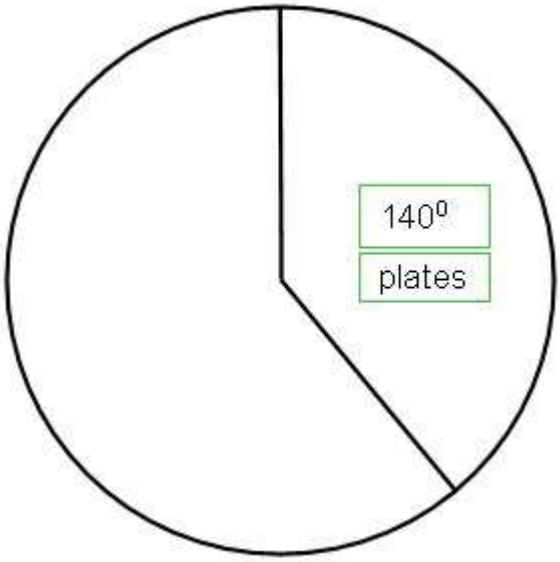
24. Laura recorded the types of tableware she had in her crockery business. She had 90 items.

Tableware	Frequency	Angle
Plates	35	140
Cups & saucers	30	
Milk Jugs		44
Sugar bowls	14	

a) Complete the table above

(2)

b) Draw an accurate pie chart to show this information. The first one has been done for you.



(2)

TOTAL FOR PAPER: 100 MARKS
END