



Please write clearly in block capitals.

Centre number

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Candidate number

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Surname

Forename(s)

Candidate signature

Functional Skills Certificate

FUNCTIONAL MATHEMATICS

Level 2

Thursday 10 November 2016 Morning Time allowed: 1 hour 30 minutes

Materials

For this paper you must have:

- a calculator
- mathematical instruments
- a copy of the Data Book (Examination) (enclosed).



Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work you do not want to be marked.
- State the units of your answer where appropriate.

Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 60.
- You may ask for more answer paper, graph paper and tracing paper. These must be tagged securely to this answer book.
- Evidence of checking is specifically assessed in Questions 1(b) and 2(b). These questions are indicated with a †.

Advice

- In all calculations, show clearly how you work out your answer.



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†1 (b) Jane pays The Crackers £600

Ruth, Ali, Kurt, Liz and Omar are the members of The Crackers.

Ruth, Ali and Kurt get £80 each.

Liz and Omar share the rest in the ratio 5 : 4

How much will Liz and Omar each get?

[3 marks]

Check that your answers for Liz and Omar are in the correct ratio.

Show how you have done your check.

[1 mark]



2 Calories

There is a **data sheet** for Calories.

2 (a) Jack uses the bike for 40 minutes at Level 2

How many calories does he use up?
Circle your answer.

[1 mark]

440

560

600

840

†2 (b) Jack uses the rower at Level 1

How many minutes does it take him to use up 300 calories?

[3 marks]

Check your answer.
Show how you have done your check.

[1 mark]



2 (d) Jack makes a smoothie using

250 g watermelon

125 g strawberries

125 ml yoghurt

He finds this information.

	Calories
100 g watermelon	30
500 g strawberries	180
125 ml yoghurt	112

Show that Jack's smoothie has less than 250 calories.

[4 marks]

16



3

Garden



Javed

I am designing a rectangular garden.
It measures 15 metres by 19.5 metres.
It has a fence all the way round it.

Javed writes these notes about his design.

Patio at the front of the garden	15 m by 4.5 m rectangle
Vegetable patch next to the fence	15 m by 1.5 m rectangle
Lawn	15 m by 12 m rectangle
Path between lawn and vegetable patch	15 m by 1.5 m rectangle
Flower bed cut out from the lawn	Circle of radius 3 m

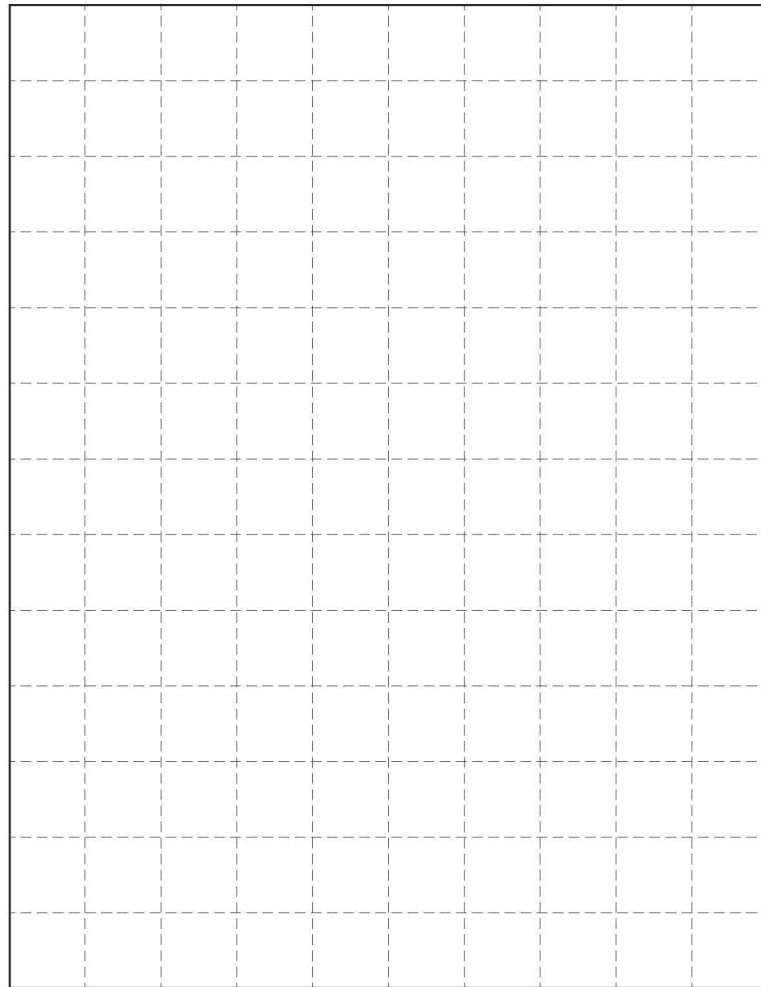


3 (a) Use Javed's notes to draw a layout of the garden on the scale drawing below.
Label all the parts of the garden.

[5 marks]

Scale 1 cm represents 1.5 m

Back



Front



- 3 (b)** Javed buys packs of paving stones to make the 15 m by 4.5 m patio.
There are two sizes of paving stones.

Size	Each pack covers	Cost per pack
Small stones	8.6 m ²	£139.75
Large stones	7.4 m ²	£128.50

Javed says,

“Using small stones will cost £175 less than using large stones.”

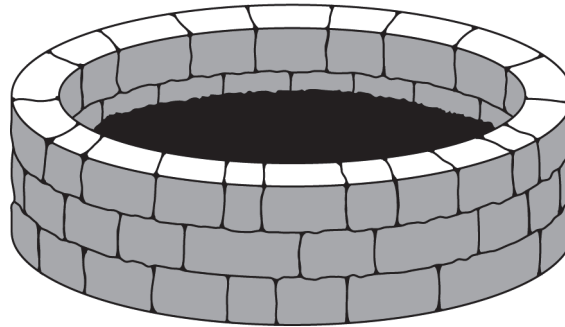
Is he correct?

You **must** show your working.

[6 marks]



3 (c) The diagram shows the flower bed.



The area of the top surface of the soil is $246\,300\text{ cm}^2$

Javed is going to fill the flower bed with soil to a depth of half a metre.

He knows that $V = A \times d$

where V is the volume of soil (cm^3)

A is the area of the top surface of the soil (cm^2)

d is the depth of soil (cm)

One bag of soil contains 800 litres.

1 litre = 1000 cm^3

How many bags of soil does he need to buy to fill the flower bed?

[5 marks]

16



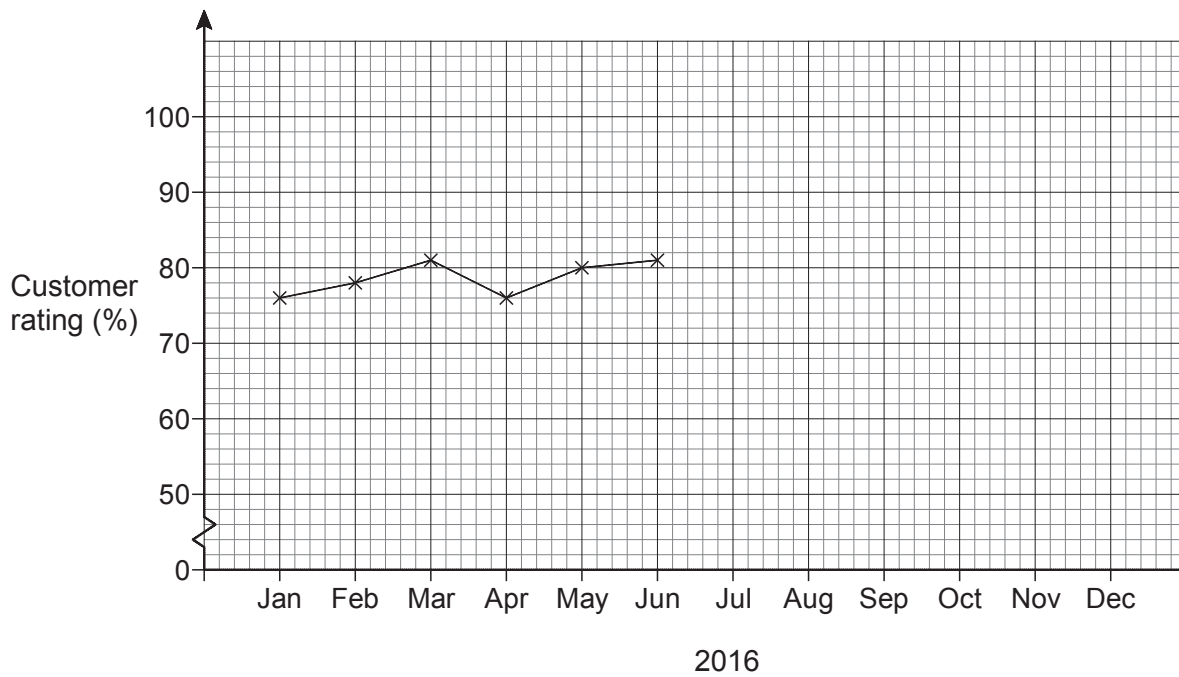
4

Customer satisfactionThere is a **data sheet** for Customer satisfaction.**Kim**

I work out customer ratings for a pet food company.

Kim draws a graph to show the ratings for **question A**.

Here are the ratings for the first six months of 2016



At the end of June 2016 the company reduced its prices.
1296 people replied to the survey in July 2016

4 (a) The table shows the 1296 scores for **question A** in July 2016

Score	0	1	2	3	4	5	6	7	8	9	10
Number of customers	0	0	1	4	9	12	12	15	33	698	512

Work out the customer rating for **question A** for July 2016
Plot the rating on the graph.

[5 marks]

4 (b) Describe **fully** how the customer rating changed after the prices were reduced.

[2 marks]



4 (c) The table shows the 1296 scores for **question B** in July 2016

Score	0	1	2	3	4	5	6	7	8	9	10
Number of customers	0	0	0	12	18	56	54	19	48	411	678

Kim’s target for the customer rating for **question B** is 75%

She says,

“In July our rating was better than 75%”

Is she correct?

You **must** show your working.

[4 marks]



4 (d) Kim sends surveys to 1128 customers in October 2016
615 customers reply.

She says,

“I can only use the survey when more than 55% of the customers reply.”

Can Kim use the survey from October 2016?
You **must** show your working.

[2 marks]

13

END OF QUESTIONS



There are no questions printed on this page

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