

INSTRUCTIONS

Fill in all the boxes below. Make sure your personal details are entered correctly. Use **BLOCK LETTERS**.

Your surname or family name

Your first forename (if any)

Your second forename (if any)

Date of birth

Centre name

Centre number

Your OCR candidate number

At the beginning of this booklet you will find tear off Resource Documents. You will need to refer to these documents to complete the tasks.

You will also need:

- a pen with black ink
- a calculator
- a ruler

YOU HAVE 1 HOUR AND 30 MINUTES TO COMPLETE THE THREE TASKS

For each task, make sure that you:

- read the questions carefully before starting
- write your answers in this booklet
- clearly show how your working leads to your answers

2 marks are available in each task when you show you have checked your work.

When you have finished, hand this booklet and all the Resource Documents to the supervisor.

Ofqual Qualification Reference Number: 500/8910/9

FOR EXAMINER USE ONLY		
Question No	Mark	Total
TASK A		
	/	/20
	/	
	/	
	/	
	/	
TASK B		
	/	/20
	/	
	/	
	/	
	/	
TASK C		
	/	/20
	/	
	/	
	/	
	/	
Total	/60	

This document consists of 28 pages. Any blank pages are indicated.

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RESOURCE DOCUMENTS

The Resource Documents on pages 5, 7, 9, 11, 13 and 15 contain information to help you to answer the tasks in this booklet.

- The resource documents are perforated along the left hand side, so they can be removed from the task and answer booklet.
- Your supervisor will instruct you when to remove the resource documents, before you start the assessment.
- Please fold pages 5, 7, 9, 11, 13 and 15 along the perforated strip before removing from the task and answer booklet.

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TASK A – MAKING LUNCH**RESOURCE DOCUMENT 1**

Here is the menu from the sandwich shop.
Each sandwich is made from 2 slices of bread.

Meal Deal	
Any sandwich, crisps and drink only £2.99	
Sandwiches	Fat content Per sandwich
Tuna salad	13.5 g
Ham, cheese and pickle	18.9 g
Chicken salad	17.1 g
Egg mayo	17.5 g
Cheese and tomato	17.6 g
Ham and egg salad	16.5 g
Bacon	23.5 g
Crisps	Fat content Per packet
Ready salted	11.4 g
Cheese and onion	11.4 g
Salt and vinegar	11.4 g
Drinks	Fat content
Still water	none
Sparkling water	none

Guideline daily amounts for average adults

Each day	Women	Men
Calories	2000 kcal	2500 kcal
Fat	70 g	95 g
Saturates	20 g	30 g
Salt	6 g	6 g
Sugar	90 g	120 g

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TASK A – MAKING LUNCH

Omar finds this information from a supermarket website.

Nutritional information					
Item	Amount	Energy	Protein	Fat	Carbohydrate
Thick sliced white loaf	In one slice	105kcal	3.6g	0.7g	21.0g
Low fat cheese slices	In one slice	70kcal	8.2g	4.0g	trace
Salad tomatoes	In one tomato	13kcal	0.5g	0.2g	2.2g
Salt and vinegar crisps	In one packet	135kcal	1.4g	8.3g	13.0g

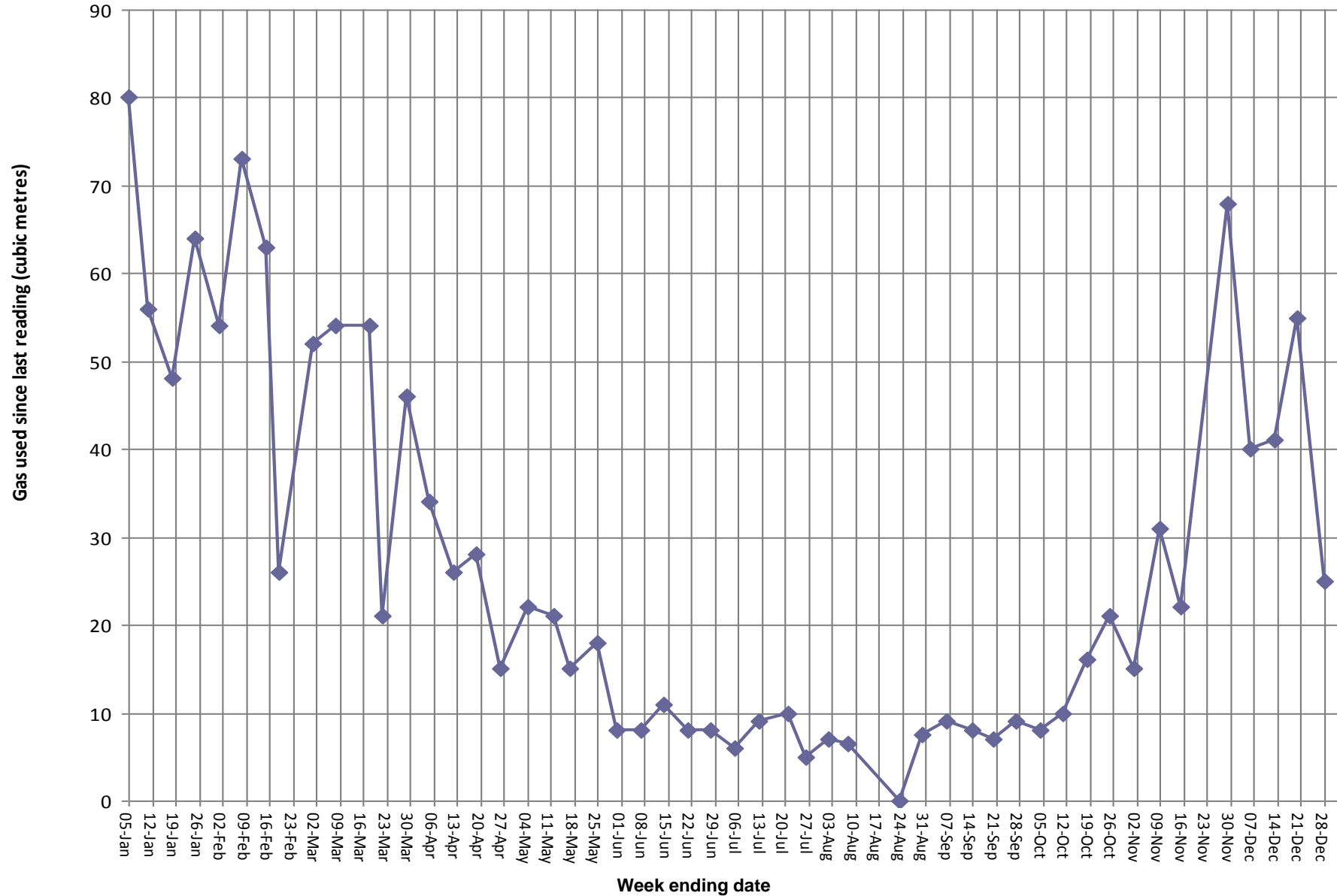
Item	Weight	Cost
Thick sliced white loaf	800g	£0.74
Low fat cheese slices	10 × 25g	£1.95
Salad tomatoes	6 pack	£0.88
Salt and vinegar crisps	6 × 25g	£0.87
Still water	500 ml	£0.43

An average loaf of bread contains 18 slices.

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TASK B – USING GAS RESOURCE DOCUMENT 1

Here is the graph showing Alex's weekly gas usage for 2009.



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TASK B – USING GAS

Here are the numbers of kilowatt hours (kWh) Alex used in each quarter of 2009.

Quarter	1	2	3	4
Gas used (kWh)	6326	1493	1301	6898

Note: a quarter of a year is 3 months.

Alex's gas charges

Price excluding VAT	
First 1143 kWh per quarter	Remaining kWh
3.500p per kWh	2.549p per kWh

Price including VAT (at 5%)	
First 1143 kWh per quarter	Remaining kWh
3.675p per kWh	2.676p per kWh

Fed up with your high winter fuel bills?

Choose our special tariff and spread your payments over the whole year.

Saver tariff

All prices include VAT

First 2680 kWh per year
Each remaining kWh

5.41485 p per kWh
2.62080 p per kWh

6% discount for online billing

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TASK C – TRAMPOLINE**RESOURCE DOCUMENT 1**

Carla finds this information about trampolines.

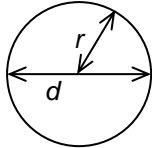
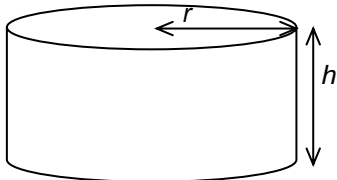
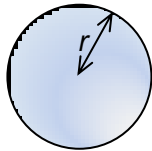
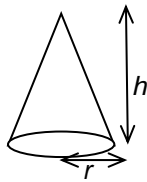
<p>Superior trampoline Lifetime guarantee against rust</p> <p>Diameter: 360 cm Maximum weight 114 kg</p> <p>£365 including delivery</p>	
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<p>Anchor kit £15</p> <p>Needed with all trampolines</p> <p>Delivered free with any trampoline</p>
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Carla's local council gives her this information.

<p>Safety surface guidelines for outdoor play equipment</p> <ul style="list-style-type: none"> • Safety surfaces must extend at least 180 cm around all sides of the base of equipment. • Where bark is used, this should be at least 300 mm deep. • It is important to have additional bark available to top up to the original level.

Carla finds these formulas in her diary.

<p>Circumference of a circle</p> <p>$C = \pi d$ or $C = 2\pi r$</p>	<p>Area of a circle</p> <p>$A = \pi r^2$</p> 
<p>Volume of a cylinder</p> <p>$V = \pi r^2 h$</p> 	<p>Volume of a sphere</p> <p>$V = \frac{4}{3} \pi r^3$</p> 
<p>Volume of a cone</p> <p>$V = \frac{1}{3} \pi r^2 h$</p> 	
<p>Take $\pi = 3.1$ or use the value on your calculator</p>	

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TASK C – TRAMPOLINE

Carla found this information from a garden supplies company on the internet.

Log roll fence

For straight or curved edges

Available in 5 heights

Guaranteed for 12 years against rot

Free delivery over £39.99



Height	150 mm	230 mm	300 mm	375 mm	450 mm
Length	1.8 m	1.8 m	1.8 m	1.8 m	1.8 m
Price (inc VAT)	£5.99	£6.99	£8.99	£10.99	£12.99

Play Bark Safety Surface

Play bark certificated to BS EN 1177: 1998

Safety certificated, fire certificated

Safe depth – at least 300 mm

Price includes VAT and delivery to UK mainland



1 cubic metre bulk bag £139.00
2 cubic metre bulk bag £189.00

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TASK AND ANSWER PAGES

Do not turn over this page until you are told to do so by your supervisor.

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TASK A – MAKING LUNCH**You will need Task A Resource Document 1**

Omar works in an office from Monday to Friday each week.
He goes out to a sandwich shop each day to buy his lunch.
Each day Omar buys the Meal Deal.

Q1 (a) (i) How much does he spend at the sandwich shop each week?

(2 marks)

(ii) Omar has 4 weeks holiday from work each year.
How much does he spend at the sandwich shop in a year?

(2 marks)

Omar is worried that he is eating too much fat.
His favourite sandwich is cheese and tomato.

Ken says



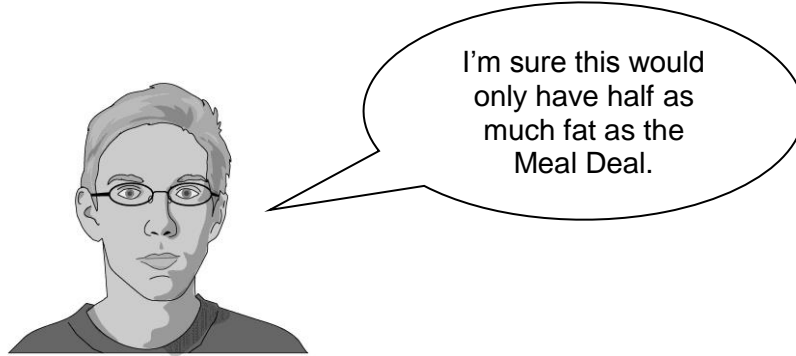
- (b)** Is Ken correct?
Use calculations to justify your answer.

(3 marks)

Omar thinks his lunch might have less fat if he made it himself.
He finds some information from a supermarket website.

He uses low fat cheese to make a cheese and tomato sandwich.
He also takes a bag of crisps and a bottle of water.

Ken says



(c) Is Ken correct?
Explain how you get your answer.

(4 marks)

TASK B – USING GAS**You will need Task B Resource Document 1**

Alex uses gas in his home for heating, cooking and hot water.
He draws a graph showing the amount of gas he used each week in 2009.

- Q2 (a) (i)** When Alex went on holiday, no gas was used in his home.
When was this?

(1 mark)

- (ii)** Alex did not use his heating in the summer.
In which month do you think he turned it back on again?

(1 mark)

- (iii)** During which month was the outside temperature probably the coldest?
Give a reason for your answer.

(2 marks)

Alex is sent a gas bill every three months (one quarter of a year).
Gas suppliers charge by the number of kilowatt hours (kWh) used each quarter.

- (b) (i)** Show that Alex will pay about £42, including VAT, for the first 1143 units of gas he uses in each quarter.

(2 marks)

- (ii)** Find the total amount, including VAT, that Alex pays for gas for all four quarters of 2009.

(4 marks)

- (c)** Alex can pay a fixed amount each month for the whole year instead of paying each quarter.
His gas supplier says he should pay £45 each month for the next year.
Alex thinks that this is not a good deal.
Is he correct?
Explain your answer.

(2 marks)

Alex thinks that he might be able to save money by changing to a different gas supplier.
He finds details on the internet of a Saver tariff and wants online billing.

- (d)** Would you recommend that Alex changes to this tariff?
Show clearly how you decide.

(6 marks)

Examiner
use only
(Q2)

Checking (2 marks)

Examiner
use only
(Checking)

Total marks

Examiner
use only
(Total)

END OF TASK B

TASK C – TRAMPOLINE**You will need Task C Resource Document 1**

Carla is a childminder.
She wants to put a trampoline in her garden.

Q3 (a) How much does it cost Carla for the Superior trampoline and an anchor kit?

(2 marks)

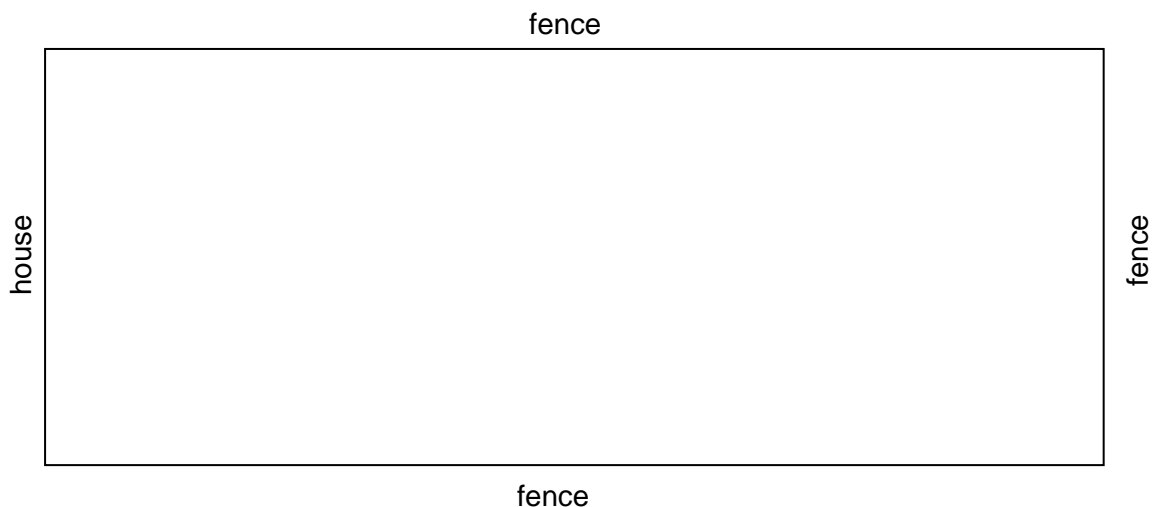
Carla will make a circular safety area under and around the trampoline.
She must follow the safety surface guidelines.

(b) What is the smallest diameter the safety area can be?

(2 marks)

This is a scale drawing of Carla's garden.
The safety area will be more than 1 metre away from the house and any fence.

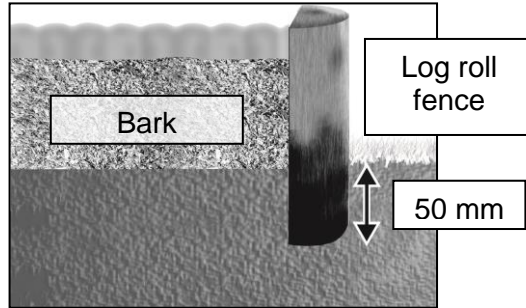
(c) Shade the region where **no part** of the safety area can be placed.



Scale: 1 cm to 2 m

(2 marks)

Carla will put a low fence around the outside of the circular safety area.
 She will use log roll fencing for this.
 She will use *Play Bark* for the safety area surface.
 The height of the log roll fence must be greater than the safe depth of bark.
 The roll must also be buried at least 50 mm into the ground to keep it in place.



(d) (i) What height of log roll should Carla buy?

(2 marks)

(ii) How much will it cost for Carla to buy the log roll fencing she needs?

(4 marks)

