


Write your name here	
Surname	Other names
Edexcel Functional Skills	Centre Number
	Candidate Number
Mathematics	
Level 2	
	
Wednesday 27 January 2010 – Morning Time: 1 hour 15 minutes	Paper Reference FM201/01
You must have: Ruler graduated in centimetres and millimetres, protractor, pen, HB pencil, eraser, calculator.	Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*

Information

- The total mark for this paper is 48.
- The marks for **each** question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*
- **Calculators may be used.**

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

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Turn over ►

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TASK 1: KITCHEN DESIGN

Answer all questions in this task.

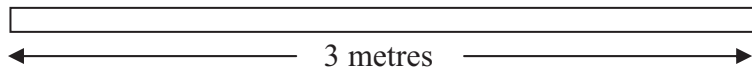
Write your answers in the spaces provided.



Where you see this sign you must show clearly how you get your answers as marks may be awarded for your working out.

1 Kevin designs and fits kitchens.

He has a piece of wood of length 3 metres.



How many pieces of wood, each of length 65 cm, can be cut from this 3 metre length?



(Total for Question 1 = 2 marks)



2 Kevin wants to record his kitchen sales for the year 2010.

Customers spend up to £6000 on a kitchen.
Kevin usually has 15–20 sales per month.

Design a table, chart or diagram that Kevin can use to record this information.

Use the box below to show clearly how you get your answer.



A large empty rectangular box for drawing a table, chart, or diagram.

(Total for Question 2 = 3 marks)



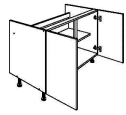
3 Kevin is designing a kitchen.

Here are the details of the kitchen units he can use.

Each unit is described by its width, and its price.

All the units have a depth (distance from front to back) of 600 mm.

The kitchen is square with a side of 3000 mm.



1000 mm
£67.00

300 mm
£45.50

500 mm
£52.00

600 mm
£53.00

Oven unit
600 mm
£39.50

Drawer unit
600 mm
£79.50

Requirements for the kitchen:

An oven unit on the right hand wall

A 600 mm unit for a sink on the wall opposite the door

At least one drawer unit.

He has been asked to fit as many units as possible along the walls of the kitchen.

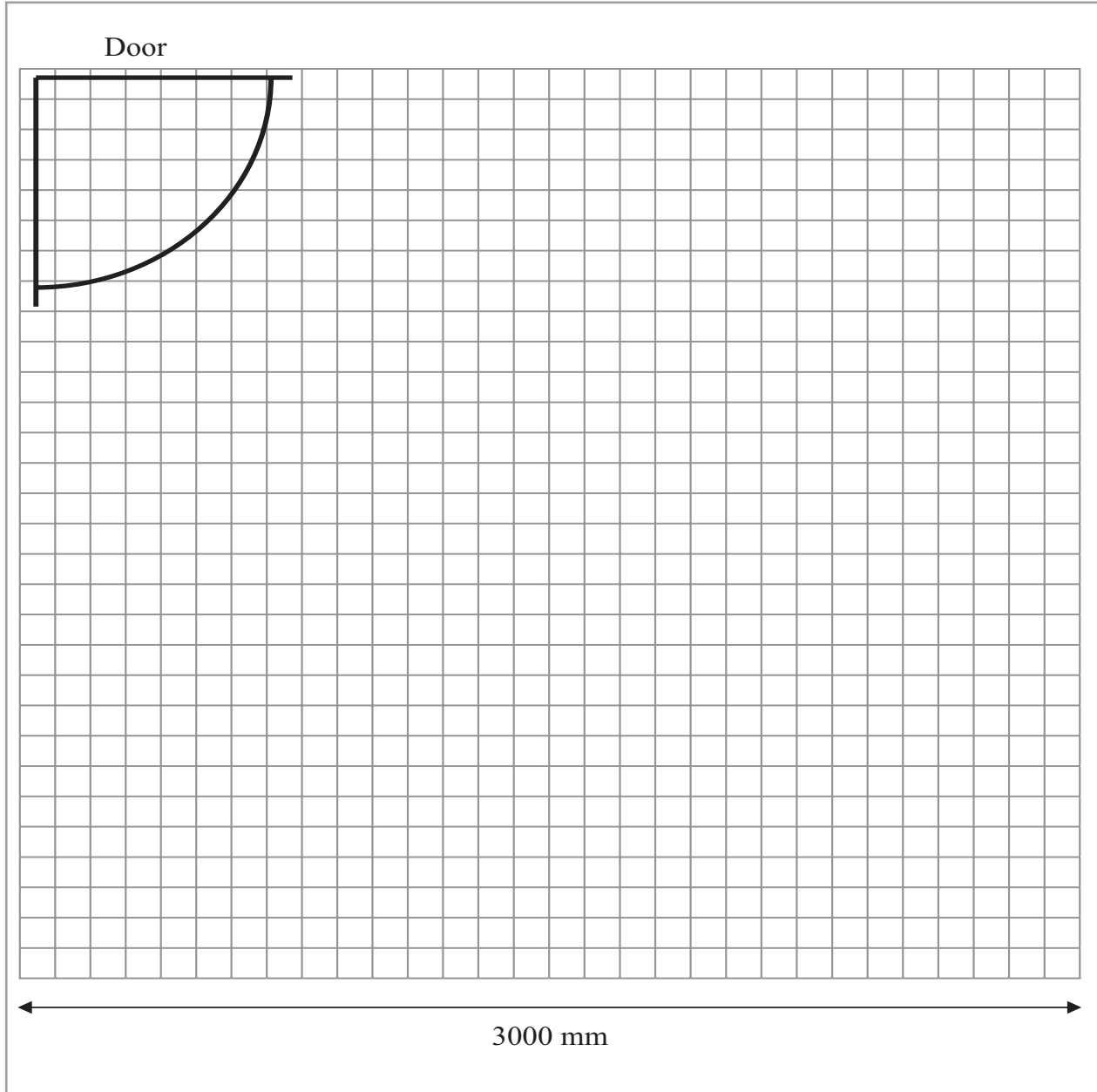
He has a budget of £550.

Use the grid opposite to draw in where Kevin should place the units.
Calculate the total cost of these units.

Use the box to show your calculations.



Use the grid to plan your kitchen.



(Total for Question 3 = 8 marks)



H 3 4 5 4 7 A 0 5 1 6

TASK 2: DELIVERY VANS

Answer all questions in this task.

Write your answers in the spaces provided.



Where you see this sign you must show clearly how you get your answers as marks may be awarded for your working out.

4 The table below shows information about how the value of a van changes with its age.

New	1 year old	2 years old	3 years old	4 years old	5 years old
£16 000	£11 500	£9800	£8500	£7400	£6500

Show this information graphically in a way which will allow you to estimate the value of the van when it is $2\frac{1}{2}$ years old.

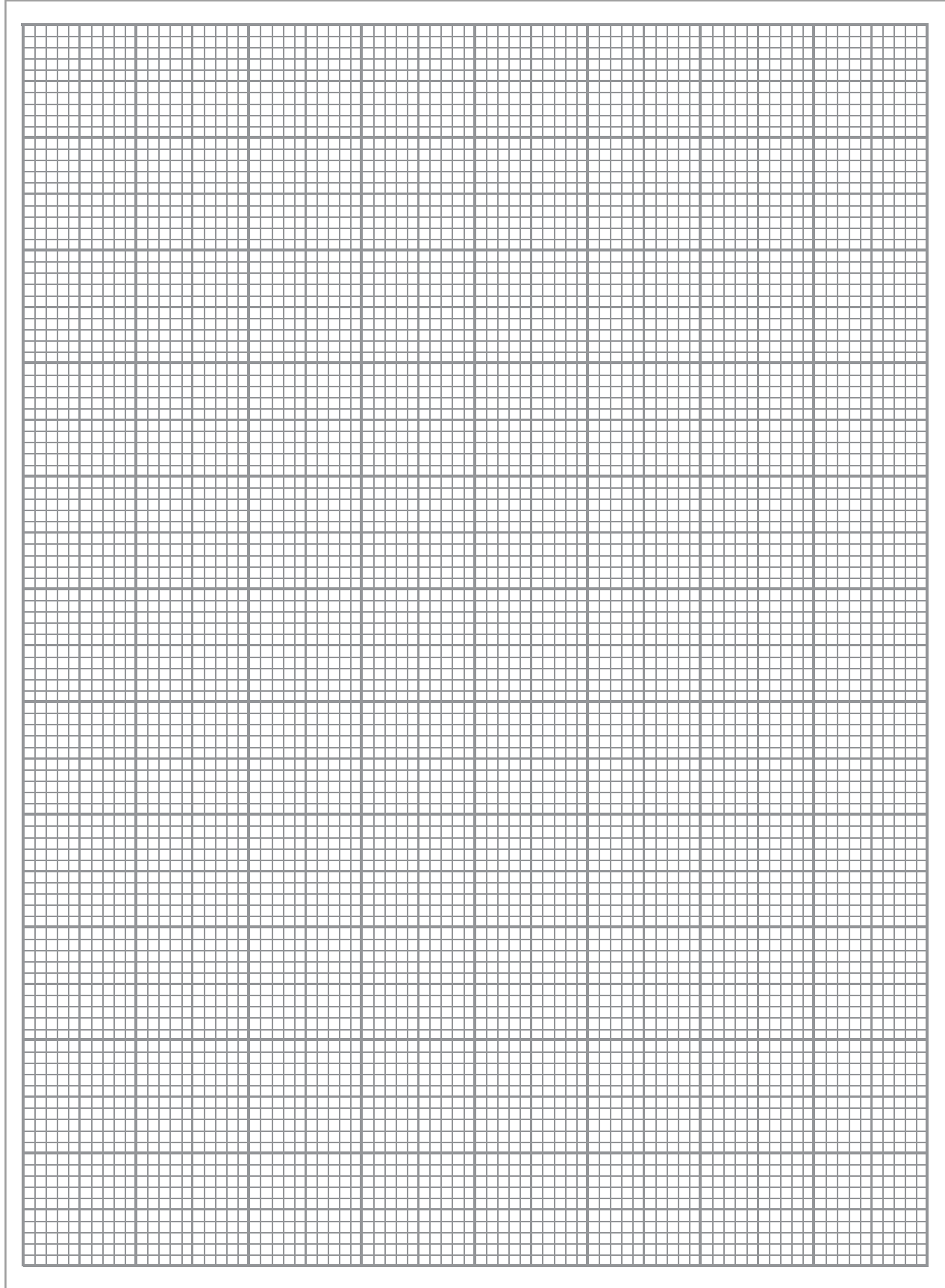
Use the box below to show clearly how you get your answer.



Estimate:



You should draw your graph on the grid below.



(Total for Question 4 = 5 marks)



H 3 4 5 4 7 A 0 7 1 6

- 5 Shams needs a van for his delivery business.
He is considering buying or leasing over the next 3 years.
He receives 3 quotations for the cost of a van.

NW Contract leasing

Van leasing charge:

£275 per month for 3 years



Business Vans Ltd

Cost of buying van:

£11 200 plus $17\frac{1}{2}\%$ VAT

Expected resale value after 3 years: £6000

Van sales

Credit costs for buying van:

£2800 then £300 per month for 3 years.

Expected resale value after 3 years: £6000

Which quotation should Shams accept?



Use the box below to show clearly how you get your answer.



A large, empty rectangular box intended for the student to show their working out for the answer.

(Total for Question 5 = 6 marks)



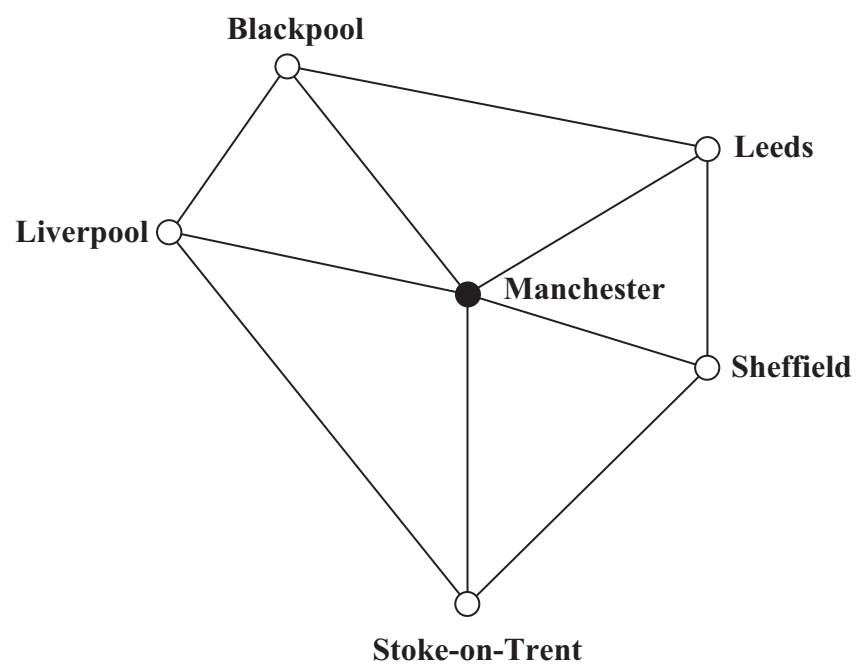
H 3 4 5 4 7 A 0 9 1 6

- 6 Shams is planning to make a number of deliveries during one day.
His office is in Manchester.
He needs to make a delivery in each of Blackpool, Leeds, Liverpool, Sheffield and Stoke-on-Trent.

The table below shows the expected travelling time between each of these towns.

Blackpool	Expected travelling time				
1 h 34 min	Leeds				
1 h 6 min	1 h 20 min	Liverpool			
61 min	52 min	40 min	Manchester		
2 h	47 min	1 h 44 min	1 h 5 min	Sheffield	
1 h 31 min	1 h 41 min	1 h	55 min	1 h 30 min	Stoke-on-Trent

Diagram **NOT**
accurately drawn



Shams will leave his office at Manchester at 8 am and return to his office by 5 pm.
He allows 10–15 minutes at each delivery and 1 hour for his lunch break.

Plan the best route for Shams to take, showing his expected arrival and departure times at each of his deliveries, and his expected arrival time back at his office.



Use the box below to show clearly how you get your answer.



A large empty rectangular box for writing the answer.

(Total for Question 6 = 8 marks)



H 3 4 5 4 7 A 0 1 1 1 6

TASK 3: FARM MEALS

Answer all questions in this task.

Write your answers in the spaces provided.



Where you see this sign you must show clearly how you get your answers as marks may be awarded for your working out.

- 7 Farm Meals is a company that prepares healthy meals from farm produce, and sells them as frozen meals.

The meals prepared by Farm Meals use one of each of four different types of ingredient to give a balanced diet.

The calorie count for a portion of each ingredient is shown below.

The tables also show the cost per portion.

1st ingredient

Meat & Poultry	Calories	Cost
Lamb	170	£1.90
Pork	150	£1.90
Beef	180	£1.80
Chicken	160	£1.60

2nd ingredient

Potatoes	Calories	Cost
Boiled potato	105	70p
Mashed potato	128	80p
Chips	143	£1.00
Baked potato	115	75p

3rd ingredient

Vegetable 1	Calories	Cost
Peas	20	30p
Carrots	14	35p
Cauliflower	12	40p

4th ingredient

Vegetable 2	Calories	Cost
Sprouts	28	35p
Cabbage	16	40p
Broccoli	32	50p

A meal has to have a total of 295–305 calories.

Each meal must contain one portion of each type of ingredient.

Packaging costs an extra 60p per meal.

Work out the four portions to go into a meal and calculate the total charge for that meal.



Use the box below to show clearly how you get your answer.



A large empty rectangular box for writing the answer.

(Total for Question 7 = 8 marks)



- 8 Jenny has been asked to give a presentation to a group of adults that shows how the meals from Farm Meals are much healthier than normal meals. She has recorded the details of five meals eaten during a week by one of the adults, and has prepared a recommendation of five main meals from the Farm Meals range.



Main meals

	Protein	Fat	Sugar	Salt	Weight of meal
Sausage & Onion Platt	38.4 g	37.6 g	21.9 g	16 g	400 g
Fish fingers & chips	13.8 g	13.8 g	21.2 g	1.4 g	300 g
Lamb burger	34.6 g	23.2 g	21.1 g	1.8 g	327 g
Beef Wellington	35.0 g	70.7 g	22.9 g	2.1 g	350 g
Roast chicken & chips	45.6 g	37.1 g	21.0 g	3.3 g	360 g

Recommended meals from Farm Meals

	Protein	Fat	Sugar	Salt	Weight of meal
Cumberland sausages	16.5 g	11.4 g	13.6 g	2.6 g	380 g
Cod in parsley sauce	24.3 g	15.5 g	27.5 g	1.3 g	370 g
Lamb & vegetable casserole	14.8 g	11.6 g	24.2 g	0.8 g	330 g
Beef & roast potatoes	17 g	17.8 g	25.2 g	1.1 g	360 g
Chicken breast	19.4 g	14.1 g	24.9 g	1.3 g	345 g

The recommended average intake for a healthy adult diet is

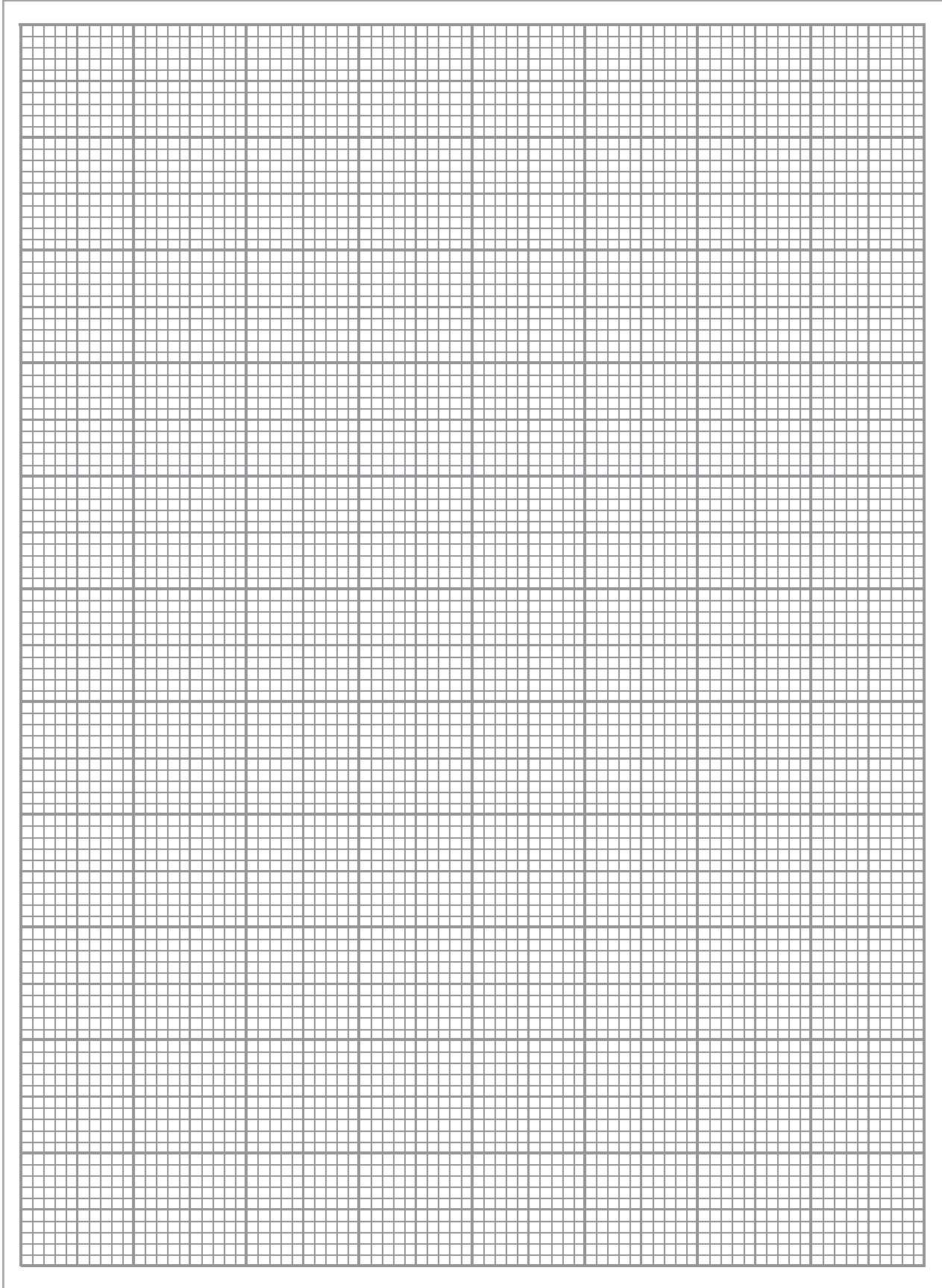
- fat: 3–20 g per 100 g of food
- sugar: 5–15 g per 100 g of food
- salt: 0.3–1.5 g per 100 g of food

Show how the meals from Farm Meals are much healthier than the main meals. Use calculations and graphs.

Use the box on page 16 for any calculations



You can draw any graphs or charts on the grid below.



H 3 4 5 4 7 A 0 1 5 1 6

Use the box below to show clearly any calculations.



Large empty box for calculations.

(Total for Question 8 = 8 marks)

TOTAL FOR PAPER = 48 MARKS

