

Write your name here

Surname

Other names

**Pearson Edexcel
Functional Skills**

Centre Number

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Candidate Number

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Mathematics

Level 2



9 – 13 May 2016

Time: 1 hour 30 minutes

Paper Reference

FSM02/01

You must have:

Pen, calculator, HB pencil, eraser, ruler graduated in cm and mm, protractor, compasses.

Total Marks

--

My signature confirms that I will not discuss the content of the test with anyone until the end of the 5 day test window.

Signature: _____

Instructions

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

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.*
- **You must show clearly how you get your answers because marks will be awarded for your working out.**



- **Check your working and your answers at each stage.**
- **This sign shows where marks will be awarded for showing your check.**

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.

Turn over ►

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PEARSON

SECTION A: Growing vegetables

Answer all questions in this section.

Write your answers in the spaces provided.

- 1 Katie grows tomato plants on her allotment.
She records the total weight of the tomatoes produced by each plant during 2015.

Tomato plant	1	2	3	4	5	6	7
Weight of tomatoes (kg)	3.61	3.48	4.05	3.79	3.51	3.59	3.68

In 2014 Katie grew 7 tomato plants.
They produced a mean weight of 3.6 kg of tomatoes.

She thinks the mean weight of tomatoes produced in 2015 is higher than the mean weight of tomatoes produced in 2014.

- (a) Is Katie correct?
Show a check of your working. (3)

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

Use the box below to show your check.



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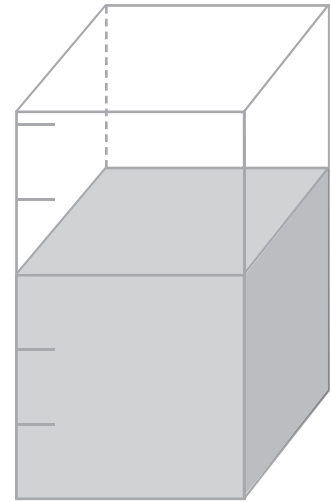
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Katie has a water tank on her allotment.
The tank can hold a maximum of 400 litres of water.

The current water level in the tank is shown in the diagram.

400 litres



Katie needs to water the vegetables on her allotment twice a day.
She uses 28 litres of water each time she waters the vegetables.

Katie thinks she has enough water in the tank for 4 days.

(b) Does Katie have enough water in the tank?

(4)

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

(Total for Question 1 is 7 marks)



2 Katie uses manure, food waste and wet leaves to make compost.

She needs 40 lb of compost.

Katie uses this information.

To make compost
mix manure, food waste and wet leaves in the ratio
 $5 : 3 : 1$

Katie has 4.8 kg of food waste.

She thinks this is not enough food waste to make 40 lb of compost.

Katie knows that 1 lb is 0.45 kg.

How much more food waste does Katie need to make 40 lb of compost?

(5)

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

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[Empty answer box for Question 2]

(Total for Question 2 is 5 marks)



3 Katie wants a space to grow lettuce on her allotment.

She wants this space to be rectangular with an area of 5 m^2 to 6 m^2 .

Katie needs a path around the space.

The path should be at least 150cm wide.

She makes a plan of her allotment.

(a) Draw the space for the lettuce and the path on the plan.
Remember to use the key.

(3)

(b) Evaluate the effectiveness of your plan.

(1)

Write your evaluation in the box below.

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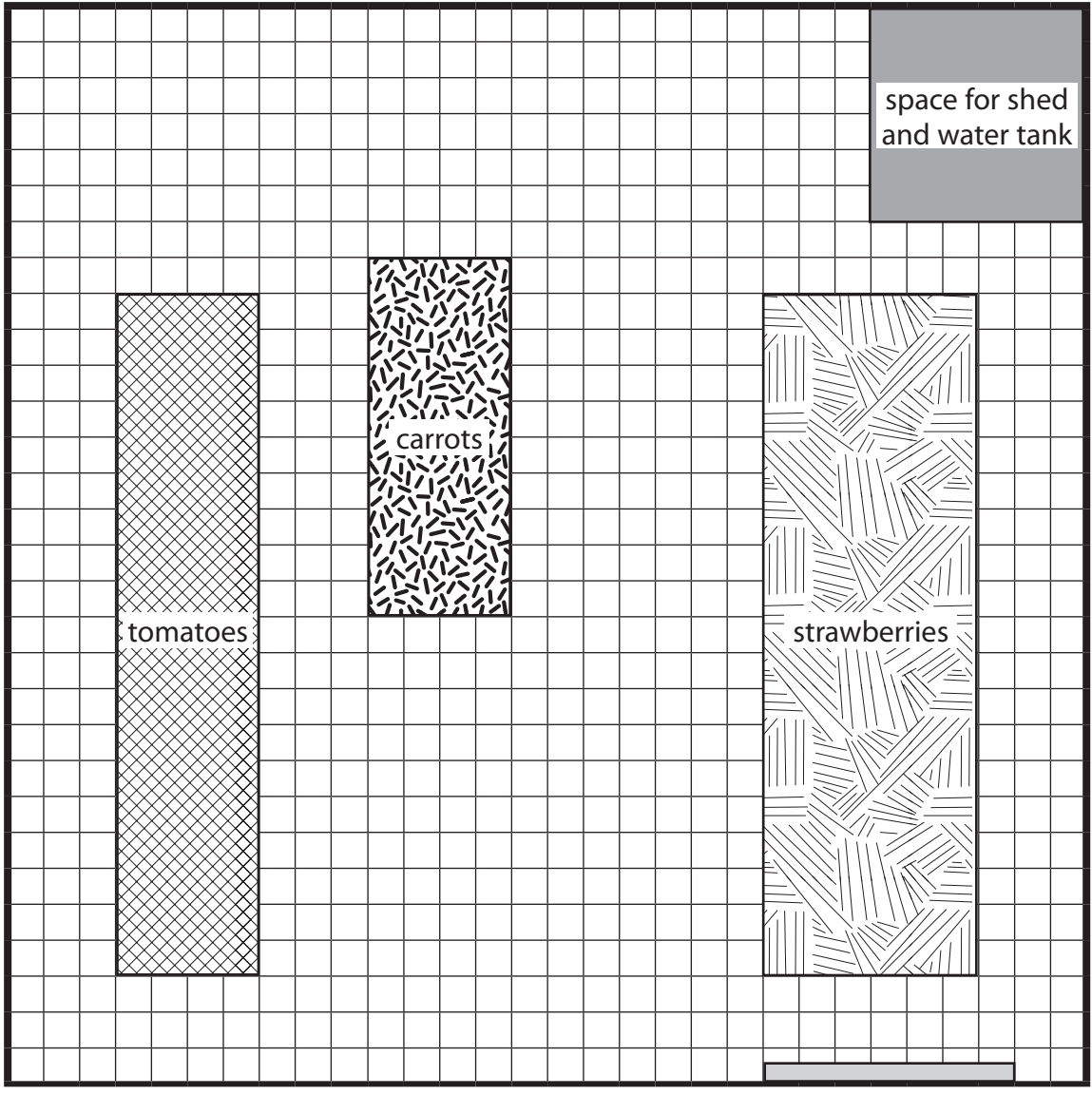
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Key

Scale 1 : 100

— fence  gate



space for shed
and water tank

tomatoes

carrots

strawberries

(Total for Question 3 is 4 marks)



SECTION B: Carpentry company

Answer all questions in this section.

Write your answers in the spaces provided.

- 4 Josh is the manager of a carpentry company.
He needs to buy some new tools.

Josh wants 3 sets of chisels and a mitre box.

Tool	Price (excluding VAT)
Hacksaw	£15.08
Mallet	£4.78
Set of chisels	£20.92
Mitre box	£4.00
Framing square	£3.92

Josh needs to add 20% VAT to the total price of the tools.
He also has to pay £3.99 delivery charge.

(a) How much does Josh pay for the tools and the delivery?

(4)

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

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Josh needs to organise the work for Monday.
He has an order for 3 doors.

Each door needs

- (C) cutting to the correct size 45 minutes
- (S) sanding 1 hour
- (V) varnishing 2.5 hours.

The doors need to be cut first then sanded and finally varnished.

There is one cutting machine so Josh can cut only one door at a time.
Josh has two workers who can either sand or varnish.
Two doors can be sanded or varnished at the same time.

The work will start at 8 am on Monday.
All 3 doors must be finished by 4.00 pm.

- (b) Make a time plan for Josh.
Remember to show the start time and the end time for each activity. (3)

Use the box below to show your time plan.

(Total for Question 4 is 7 marks)



5 Josh makes wardrobes.

One type of wardrobe is made from

- 3 small panels 600 mm by 600 mm
- 4 large panels 2130 mm by 600 mm.

Josh cuts out the panels for this wardrobe from wooden boards 2400 mm by 2000 mm.

There are no joins within a panel.

A customer orders 6 of these wardrobes.

Josh thinks he needs 10 wooden boards to make the wardrobes.

Is Josh correct?

Show why you think this.

You may use diagrams.

(6)

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



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[Empty answer box for Question 5]

(Total for Question 5 is 6 marks)



- 6 Josh wants to apply for a loan from a bank to expand his business. He keeps a record of the profit for each quarter over the last two years.

Quarter	Q1	Q2	Q3	Q4
2014	£32 500	£40 750	£37 500	£45 250
2015	£35 000	£36 750	£46 000	£46 250

Josh wants to display this information in a graph or chart.

Draw the graph or chart for Josh.

(3)

Use the graph paper to show your graph or chart.

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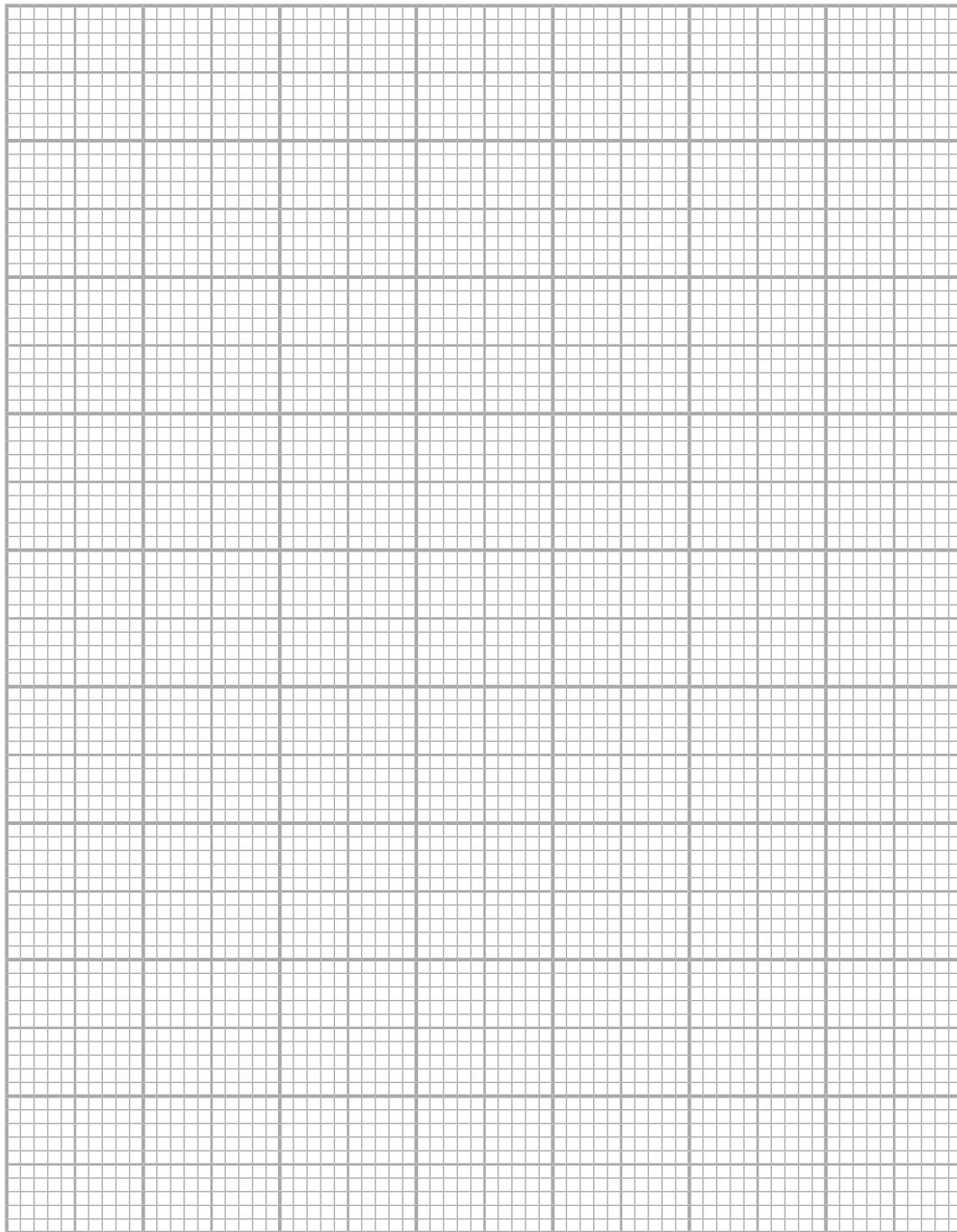
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(Total for Question 6 is 3 marks)



SECTION C: Hotel

Answer all questions in this section.

Write your answers in the spaces provided.

- 7 Malik is a hotel manager.
He collected this information from the hotel guests.

Guest	Rating	Length of stay	UK or abroad
1	excellent	2 days	UK
2	excellent	1 day	abroad
3	good	5 days	UK
4	excellent	10 days	abroad
5	excellent	2 days	UK
6	good	3 days	UK
7	good	1 day	UK
8	good	5 day	UK
9	excellent	8 days	UK
10	poor	1 day	abroad
11	good	4 days	abroad
12	excellent	12 days	abroad
13	poor	4 days	UK
14	excellent	1 day	UK
15	excellent	7 days	UK
16	excellent	6 days	abroad
17	good	3 days	abroad
18	good	9 days	UK

Malik wants to summarise this information in a two-way table.

He wants to know how many guests

- rate the hotel excellent, good, or poor
- stay under 3 days, or stay 3 days or more
- are from the UK, or are from abroad.

Design and complete a two-way table for Malik.

(5)

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- 8 A family from Spain book a room online for 5 nights.
The cost of the room is 126.07 euros per night.

When they arrive at the hotel they are offered a room with a sea view.

The family will need to pay an extra £15 per night for this room.

£1 is 1.3203 euros

The family does not want to pay more than 750 euros in total.

(a) Can the family afford to stay in the room with the sea view?

(4)

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

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The family can rent water sport equipment from the hotel.

Here is the price list.

Equipment	Half hour	1 hour	3 hours	6 hours
Kayak	£10.00	£15.00	£27.50	£35.00
Canoe	£10.00	£15.50	£26.00	£35.50
Surfboard		£25.00	£35.50	£55.80
Sail boat		£41.50	£50.00	£65.00

The hotel has a special offer.

Rent any water sport equipment for 6 hours
get $\frac{1}{3}$ off the price

(b) How much will the family pay to rent a canoe for 6 hours with this offer?

(3)

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

(Total for Question 8 is 7 marks)



9 Malik organises an event at the hotel.

There will be 80 guests at the event.
A DJ will be hired for 6 hours.

Malik uses this formula to find the total cost of the event.

$$C = 1.2(55G + 72.99H)$$

C = total cost of the event (£)
G = number of guests
H = number of hours a DJ is hired for

Work out the total cost of the event.
Show a check of your working.

(4)

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

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Use the box below to show your check.



(Total for Question 9 is 4 marks)

TOTAL FOR PAPER IS 48 MARKS



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