Write your name here

Surname	Other names

Edexcel
Functional Skills

Centre Number

Candidate Number

Mathematics
Level 2

Mock Test 1

9–13 January 2012
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 **black** ink or 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.*
- **Where you see this sign you must show clearly how you get your answers because marks will be awarded for your working out.**

Advice

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

Turn over ▶

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PEARSON

SECTION A: The Berby Restaurant

Answer all questions in this section.

Write your answers in the spaces provided.

1 Sharnia is the new manager of the Berby Restaurant.
She is going to make some changes at the restaurant.

The Berby Restaurant serves Sunday lunch.
The cost of the food and cooking for the Sunday lunch is £4.35 per customer.

Sharnia wants to make a profit of 75% on each lunch.

(a) What price should Sharnia charge for Sunday lunch?

(3)

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

Sharnia does not like the potatoes the restaurant uses.
She estimates that the restaurant uses 14 kg to 17 kg of potatoes per day.

The Berby Restaurant is open 7 days a week.

One supplier sells potatoes Sharnia likes in sacks of 12.5 kg.

(b) How many of these sacks of potatoes does Sharnia need each week?

(3)

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

The cost of the potatoes is £3.75 per sack.

(c) What would these potatoes cost each week?

(1)

Write your answer in the box below.

(Total for Question 1 is 7 marks)

2 Sharnia thinks the kitchen staff at the restaurant should bake bread instead of buying it.

Sharnia knows that when they buy bread

- they order 12 loaves of bread each day
- the 12 loaves cost a total of £10.80

She finds out that if they bake the bread in the kitchen

- it takes 800 g of flour for one loaf of bread
- flour costs £16 for a 25 kg sack
- the other costs will be 30p per loaf of bread.

> Compare the cost to buy the bread with the cost to bake the bread in the kitchen.
>
> **(6)**

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

(Total for Question 2 is 6 marks)

3 The restaurant has a special celebration menu.

Celebration Menu

First Course: Soup **or** Pate

Main Course: Turkey **or** Salmon **or** Nut Roast

Sweet: Chocolate Cake **or** Sorbet

Sharnia needs to design a data collection sheet for the waiting staff to use.

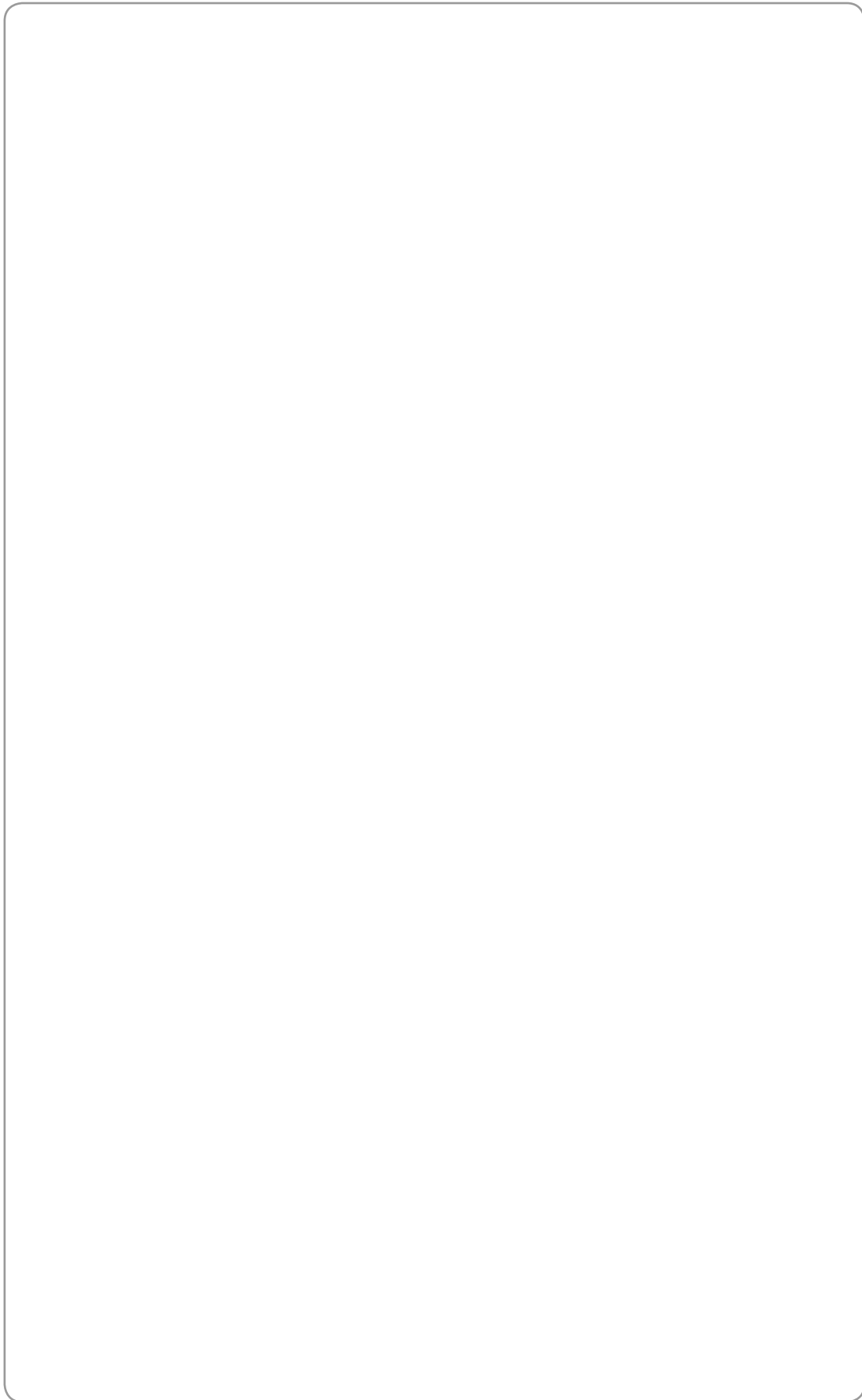The data collection sheet must record clearly the meal choices of each person at each table.

There will be 6 people sitting at each table.

Design a data collection sheet for Sharnia.

(3)

Use the box below to show your data collection sheet.

(Total for Question 3 is 3 marks)

SECTION B: The Alphabet Nursery

Answer all questions in this section.

Write your answers in the spaces provided.

4   Janine is the manager of a children's nursery.
   The table shows the number of children in each group at the nursery on Monday.

Group name	Morning session	Afternoon session
Active ants	5	8
Bouncy bears	9	12
Clever cats	12	14

Janine has to work out how many nursery staff she needs to work on Monday.

The table below shows the maximum number of children a member of nursery staff can look after for each nursery group.

Group name	Ratio of staff to children
Active ants	1 : 3
Bouncy bears	1 : 4
Clever cats	1 : 8

Janine needs to work out the minimum number of nursery staff to work with each group in the morning session and in the afternoon session on Monday.

How many nursery staff does Janine need for each group for each session on Monday?

(3)

Use the box below and the table to show your working and your answer.

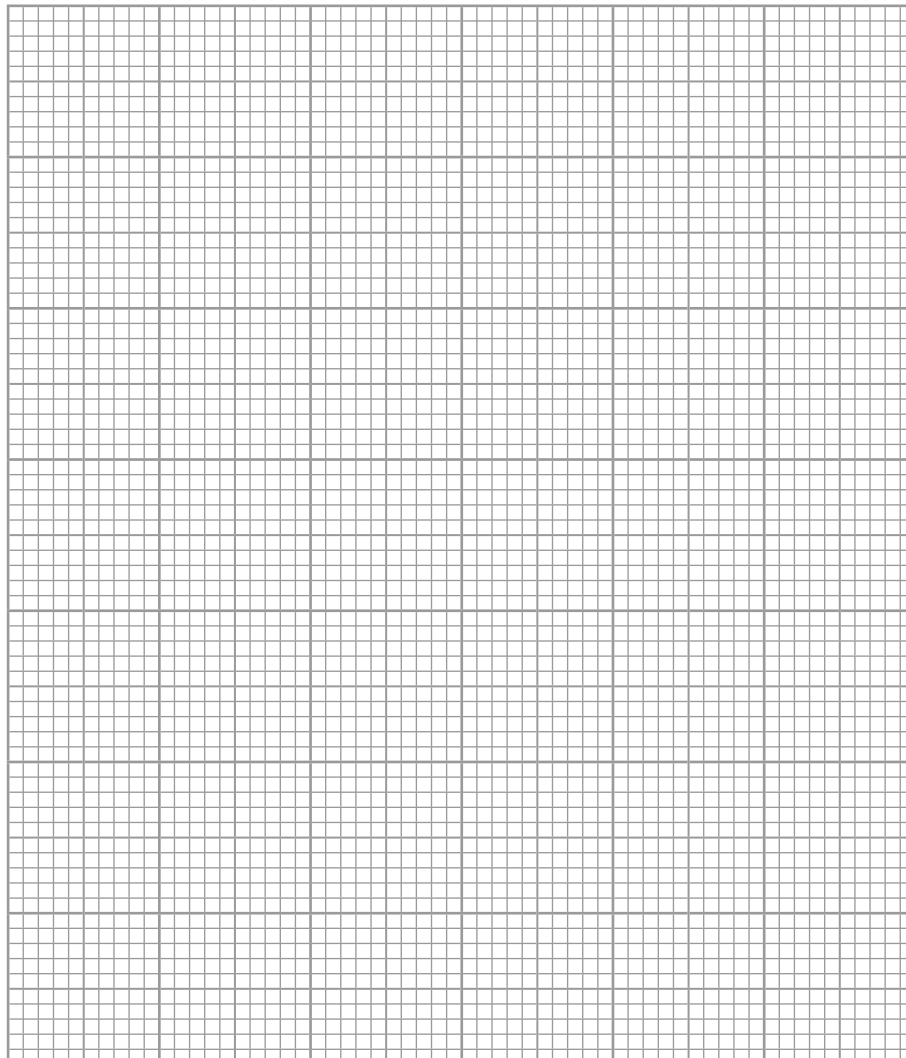| Group name	Number of morning staff	Number of afternoon staff
Active ants		
Bouncy bears		
Clever cats		

(Total for Question 4 is 3 marks)

5 Janine must report to the owner of the nursery every three months.
She wants to draw a graph to display income from the nursery.

The table shows the income for the last three months of 2011

	October	November	December
Morning session	£8500	£10 500	£9000
Afternoon session	£13 000	£16 750	£15 000

Draw a graph or chart for Janine.

(3)

(Total for Question 5 is 3 marks)

6 Charmene has a baby called Louis.
Louis goes to the nursery.

The nursery staff make up bottles of milk for Louis.

Louis has 2 bottles of milk at the nursery each day.
Each bottle of milk needs 7 scoops of milk powder.
One scoop weighs 4.7 g

Charmene gives the nursery staff milk powder in 900 g tins.

> Charmene thinks a tin of milk powder will last for 13 days. Is she right?
>
> **(4)**

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

(Total for Question 6 is 4 marks)

Turn over ▶

7 Janine wants to put sand in the sandpit at the nursery.

The sandpit is in a rectangular space with length 4.5 m and width 3.5 m.
Janine wants to fill the sandpit with sand to a depth of 300 mm.

She finds out on the internet that each bulk bag of sand covers an area of 5 m^2 to a depth of 100 mm.

Volume of a Cuboid = Length × Width × Depth

How many bags of sand does Janine need to fill the sandpit?

(6)

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

(Total for Question 7 is 6 marks)

P 3 7 6 7 3 A 0 1 3 2 0

SECTION C: A trip to France

Answer all questions in this section.

Write your answers in the spaces provided.

8   Fraser is going to drive his car to Lyon in France.
He needs to drive to Dover to get on a ferry.

Fraser wants to know if he has enough fuel to drive from his home to Dover.

His car fuel tank has a capacity of 70 litres.

The fuel tank is a quarter full.

Use
1 gallon = 4.55 litres

(a) How many gallons of fuel are there in the fuel tank?

(2)

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

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Fraser knows that his car uses about 1 gallon of fuel every 40 miles.
The distance from Fraser's home to Dover is 200 miles.

(b) Does Fraser have enough fuel in his fuel tank to drive from his home to Dover?

(2)

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

(Total for Question 8 is 4 marks)

P 3 7 6 7 3 A 0 1 5 2 0

9 Fraser wants to buy 12 boxes of chocolate in Lyon.
He finds these offers from two different supermarkets.

Champion Supermarket

Buy 2 get 1 free

Price 2.97 € per box

Grand Supermarket

30% off the normal price
of each box

Normal price
2.90 € per box

Fraser wants to spend as little as possible on the boxes of chocolate.

Which supermarket should Fraser buy the boxes of chocolate from?

(5)

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

```
P 3 7 6 7 3 A 0 1 7 2 0
```

10 Fraser is going to cycle a route around Lyon.

He knows that without rests, the route takes 8 hours 50 minutes
total cycling time.

Fraser needs to stop for a rest after every 3 to $3\frac{1}{2}$ hours of cycling time.

His rest periods are 45 minutes.

Fraser needs to finish the cycling route by 18:40

He wants to start cycling the route as late as possible.

(a) What time should Fraser start cycling?

(3)

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

Fraser needs to drive to get on a ferry to go home.
There is a delay on the journey.

Fraser has 90 minutes left to get to the ferry check-in.
He has to travel 230 km to the ferry check-in.
There is a speed limit of 130 km/h.

$$S = \frac{D}{T}$$

S = Speed (km/h)

D = Distance (km)

T = Time (h)

Fraser will **not** drive faster than the speed limit.

(b) Can Fraser get to the ferry check-in on time?

(4)

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

(Total for Question 10 is 7 marks)

TOTAL FOR PAPER IS 48 MARKS

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