Write your name here

Surname		Other names

Edexcel
Functional Skills

Centre Number

Candidate Number

Mathematics
Level 1

21 – 25 March 2011
Time: 1 hour 30 minutes

Paper Reference
FSM01/01

Total Marks

You must have:
Pen, calculator, HB pencil, eraser, ruler graduated in cm and mm, protractor, compasses.

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.*
- **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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SECTION A: The children's nursery

Answer all questions in this section.

Write your answers in the spaces provided.

1   Jo owns a children's nursery.

The table shows the ages of the 30 children in the nursery.

Name	Age
Ann	8 months
May	2 years 1 month
Bob	4 years 2 months
Raj	3 years 3 months
Pete	2 years 8 months
Sue	5 months
Hugh	4 years 1 month
Sally	3 years 5 months
Mark	9 months
Fiona	2 years 9 months
Zac	2 years 4 months
Ali	3 years 7 months
Faz	14 months
Manjit	3 years 6 months
Irene	2 years 1 month

Name	Age
Rory	2 years 8 months
Sunil	18 months
Gary	2 years 1 month
Helen	3 years 4 months
Anji	12 months
Sophie	4 years 6 months
Molly	3 years 9 months
Abbi	19 months
Clare	3 years 4 months
Billy	3 years 8 months
Farah	2 years 10 months
Reema	16 months
Matt	3 years 2 months
Henry	4 years
Liam	3 months

Jo needs to know how many children are in each of these age groups:

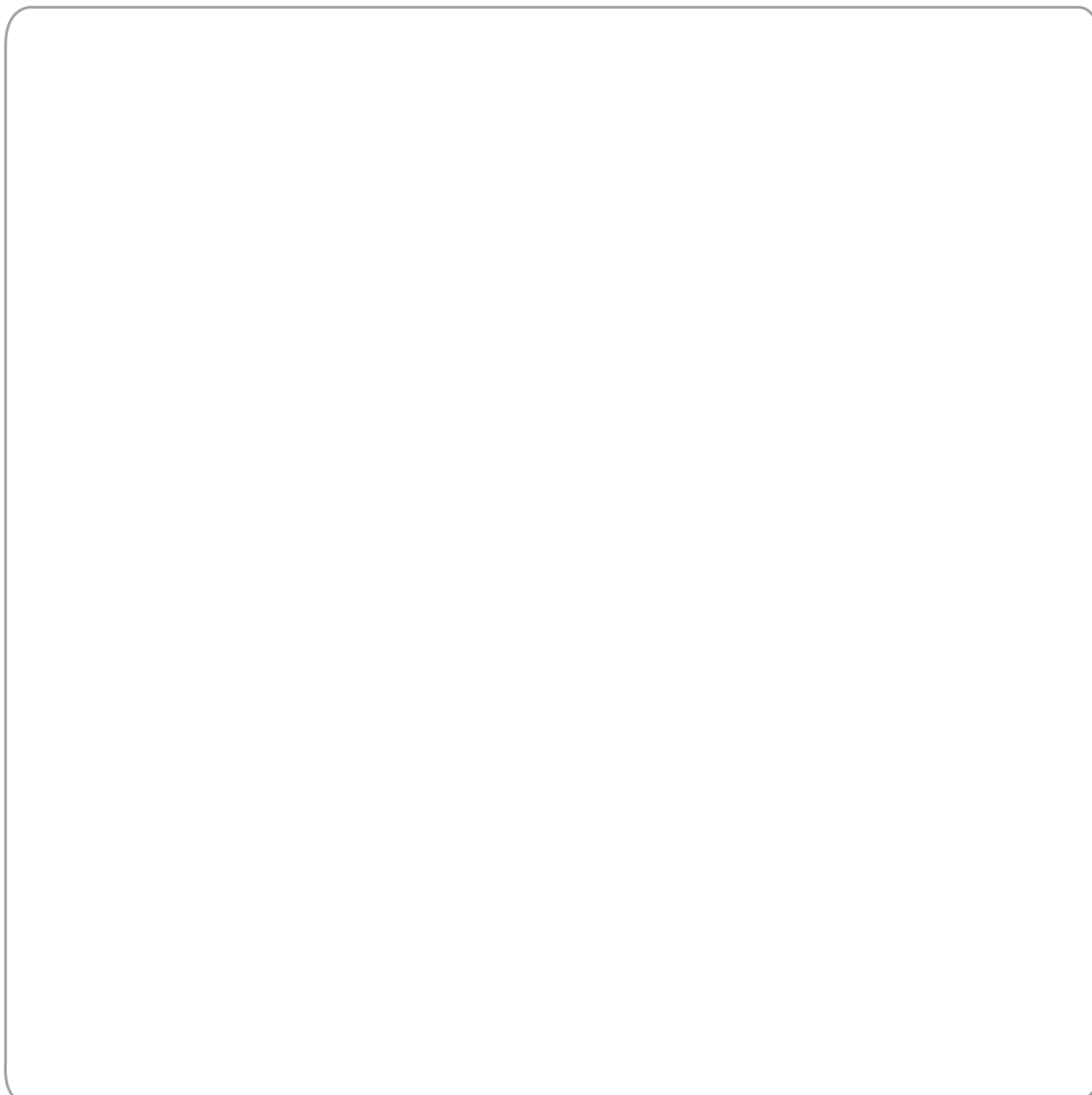   under 2 years old
   2 years old
   3 – 7 years old.

Design a table or chart to record the number of children in each age group.
Complete it for all 30 children in Jo's nursery.

(3)

Use the box below to show clearly your completed table or chart.

(Total for Question 1 is 3 marks)

Turn over ▶

2 The table below shows the maximum number of children each adult can look after in a nursery.

Age group	Supervision ratio
under 2 years	1 adult for every 3 children
2 years	1 adult for every 4 children
3 – 7 years	1 adult for every 8 children

Jo would like to have 50 children in the nursery.

She has the following adults for each age group:

under 2 years 5 adults
2 years 4 adults
3 – 7 years 2 adults

(a) Does Jo have enough adults to look after 50 children?

(4)

Use the box below to show your calculations and explain your answer.

Jo pays her nursery staff £5.95 per hour.
Each person works 8 hours per day from Monday to Friday.
There are 11 nursery staff.

Jo needs to calculate how much she pays her staff in total each week.

(b) Show how she can calculate this.

(4)

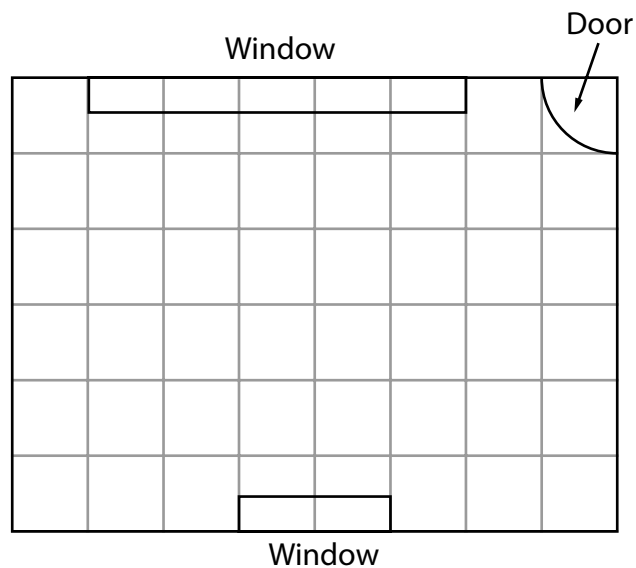Use the box below to show your calculations and your answer.

(Total for Question 2 is 8 marks)

Turn over ▶

3 The nursery has a room for the 2 year old children.
Jo wants to have two separate spaces in the room.

One space will be a story-time corner.
The other space will be for messy play.

Jo draws a plan of the room.

Door

Window

Window

Key: 1 cm on the plan = 1 m in the room

The story-time space will be in a corner of the room.
It will be in the shape of a rectangle with dimensions 2 m by 3 m.

(a) Draw the story-time corner on the plan.

(2)

The space for messy play will be along a wall.
It will be in the shape of a rectangle.
It will have an area of 12 m^2.

(b) Draw the space for messy play on the plan.

(2)

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The rest of the room is for active play.
Jo thinks she needs at least 20 m² of space for active play.

(c) Does she have at least 20 m² of space for active play?
Show why you think this.

(1)

You may use the box below or the plan opposite to show your answer.

(Total for Question 3 is 5 marks)
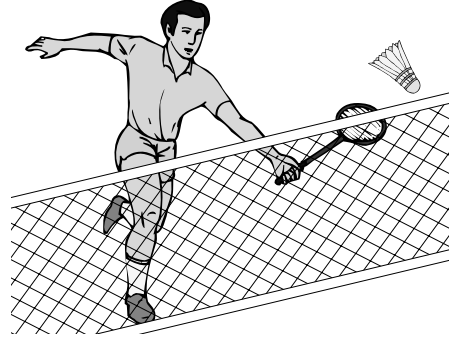
SECTION B: Badminton

Answer all questions in this section.

Write your answers in the spaces provided.

4   Cove and Fleet are two badminton clubs.
The two clubs are going to play against each other.
Each club will have 3 pairs of players.

Cove	Fleet
Pair A	Pair D
Pair B	Pair E
Pair C	Pair F

Each pair from Cove will play a game against each pair from Fleet.

There is only 1 badminton court.
When a pair has played in a game, that pair cannot play in the next game.

(a) Plan the order of the games for the two clubs.

(3)

Show your plan clearly in the box below.

The Cove players will pay for refreshments and to hire the badminton court.

The total cost for refreshments will be £15

It costs £4.50 per hour to hire the court.
They will need to hire the court for 3 hours.

The six players from Cove will share the costs equally.

(b) How much will each Cove player have to pay?

(3)

Use the box below to show your calculations and your answer.

Here are the results of the last 6 matches each club played.

Cove	won	lost	won	lost	won	won
Fleet	won	lost	lost	won	lost	lost

(c) **Explain** which team is more likely to win the match between Cove and Fleet.
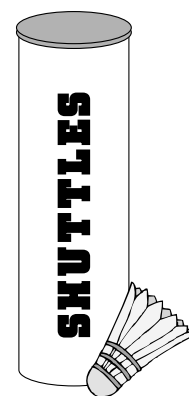
(1)

Use the box below for your answer.

(Total for Question 4 is 7 marks)

5   In badminton the players hit a shuttle.
Shuttles are sold in tubes.

The table below shows information about the cost of shuttles.

Number bought	Type of shuttle		
	Feather No 3	**Feather No 4**	**Nylon**
1 to 11 tubes	£11.50 per tube	£10.50 per tube	£9.75 per tube
12 to 23 tubes	£10.95 per tube	£9.95 per tube	£9.25 per tube
24 tubes or more	£10.75 per tube	£9.75 per tube	£8.95 per tube

Cove club uses Feather No 3 shuttles.

The club buys shuttles four times per year.
The club buys 10 tubes each time.

The team captain says,

'If we change to Nylon shuttles and we make one order for 40 tubes,
we can save more than £100 a year.'

Is the team captain correct?

(5)

Use the box below to show your calculations and explain your answer clearly.

(Total for Question 5 is 5 marks)

6 Cove is going to play 3 matches in September.

Match dates

5th September
14th September
23rd September

September 2011					
Mon		5	12	19	26
Tues		6	13	20	27
Wed		7	14	21	28
Thurs	1	8	15	22	29
Fri	2	9	16	23	30
Sat	3	10	17	24	
Sun	4	11	18	25	

The table below shows when players can play in September.

Player	Days they can play
Asif	Only Tuesdays and Fridays
Carl	Every day
Dan	Only Mondays, Tuesdays and Fridays
Jim	Every day
Luke	Only Wednesdays and Sundays
Mike	Every day
Pete	Only weekdays, **not** weekends
Rahul	Only Wednesdays and Thursdays
Sam	Only Wednesdays and Saturdays
Xing	Only Mondays and Fridays

The club needs 6 players for every match.

Each player will play in at least 1 match.

Make a list of the 6 players for each match in September.
Label each list clearly with the match date.

(4)

Use the box below to show your answer clearly.

(Total for Question 6 is 4 marks)

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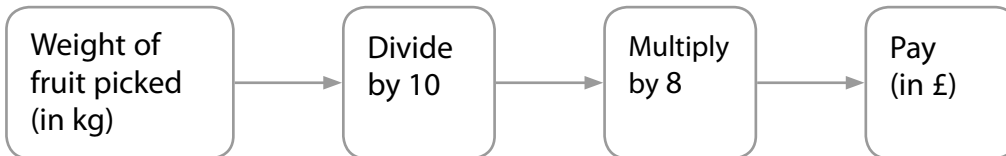
SECTION C: The fruit farm

Answer all questions in this section.

Write your answers in the spaces provided.

7 Maha owns a fruit farm.

Each day she pays workers to pick the fruit.

Maha uses this rule to work out each worker's pay.

Weight of fruit picked (in kg)	→	Divide by 10	→	Multiply by 8	→	Pay (in £)

Phil is one of the workers.

One day he picks 60 kg of fruit.

(a) How much does Maha pay Phil?

(2)

Use the box below to show clearly your calculations and your answer.

Maha grows apples to make juice.
Last year she made 15 000 bottles of apple juice.

This year Maha has 36 000 kg of apples for juice.
She uses 2 kg of apples for every bottle of juice.

Maha's target is to make 2000 more bottles of apple juice than she made last year.

(b) Will Maha reach her target?

(3)

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

(Total for Question 7 is 5 marks)

Turn over ▶

8 Maha writes down the tasks she needs to do next day.

- Help in farm cafe   12 pm – 2.30 pm

- Lead farm tours   11 am and 4 pm (each tour lasts 45 minutes)

- Check stock in farm shop (30 minutes)

- Check apple juice machines (30 minutes)

- Work in farm office (1 hour)

Maha wants to start work at 9 am and finish work by 5 pm.

Make a time plan for Maha's day.
Show the start time and finish time for each task.

(3)

Show your time plan clearly in the box below.

(Total for Question 8 is 3 marks)

9 Sally is the manager of the farm cafe.
Sally wants to find out if the cafe business is getting better.

Each week she calculates the mean daily amount spent in the cafe.

The table shows the total amount spent in the cafe each day last week.

Mon	Tues	Wed	Thurs	Fri	Sat	Sun
£475	£550	£375	£425	£650	£925	£975

Sally calculates that last week's mean daily amount is £625

(a) Is Sally right?
Show why you think this.

(3)

Use the box below to show clearly how you check Sally's calculation.

Three friends, Brian, Sue and Rana visit the cafe.

They all have a cream tea and an extra scone.

Brian also has extra cream.

Cream teas £4 each

Extra cream 75p
Extra scone 50p

Here is the bill.

Cream teas …………………. £12.00
Extras …………………………. £ 1.50

Total ………………………….. £13.50

Sue says the bill is wrong.

(b) Check the amounts shown on the bill.
Is the bill wrong?

(2)

Use the box below to show your checks and explain your answer.

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People can pick strawberries on the farm.
They pay for the strawberries they pick.

Brian picks $4\frac{1}{2}$ kg of strawberries.

He pays a total of £15.75

Sue wants 500 grams of strawberries.
Brian says she can buy them from him for the same price he paid.

(c) How much should Sue pay Brian for 500 grams of strawberries?

(3)

Use the box below for your calculations and your answer.

(Total for Question 9 is 8 marks)

TOTAL FOR PAPER IS 48 MARKS

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