

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



4–8 November 2013

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

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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.**
- **Check your working and your answers at each stage.**



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: Applegate farm centre

Answer all questions in this section.

Write your answers in the spaces provided.

- 1** Barry is the manager of Applegate farm centre.
They grow fruit at the farm.
The farm centre has a shop, a restaurant and a farm zoo.
Barry collects information about what visitors do at the farm centre.

They can

- buy food in the farm shop
- eat in the restaurant
- go to the farm zoo.

He collects information from men and women.
Barry wants to put all the information together on one sheet of paper.

Design a data collection sheet for Barry. (3)

Use the box below for your data collection sheet.

(Total for Question 1 is 3 marks)



2 There is a lot of plum jam left in the farm shop.
Barry decides to reduce its price from £3.40 to £2.95
He thinks this is a 15% decrease in price.

(a) Is Barry correct?
Show why you think this.

(3)

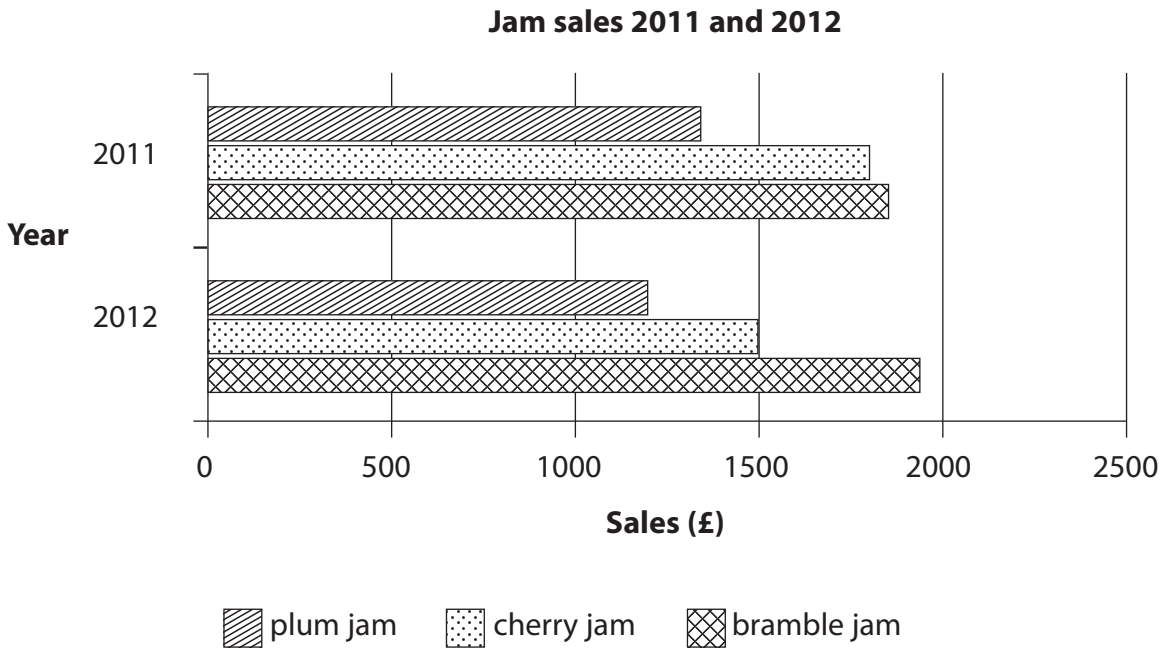
Use the box below to show clearly how you get your answer.



A large empty rectangular box for writing the answer.



Barry makes this graph to display information about jam sales for a meeting.



(b) Write two statements to compare the jam sales. (2)

Write your statements in the box below.

(Total for Question 2 is 5 marks)



3 Barry wants to collect rainwater in water butts at the farm zoo.

He finds a water butt.

- It is a cylinder.
- It has a diameter of 40 cm.
- It has a height of 125 cm.

He uses this formula to work out the volume of the cylinder.

$$V = 0.785d^2h$$

V = volume of the cylinder (cm^3)
 d = diameter of the cylinder (cm)
 h = height of the cylinder (cm)

Barry wants a water butt with a volume of at least $950\,000\text{ cm}^3$

Does this water butt have a volume of at least $950\,000\text{ cm}^3$?

(3)

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



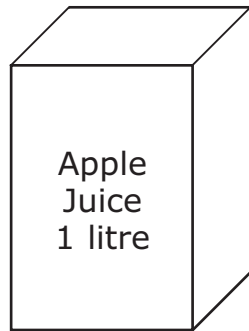
A large empty rectangular box for writing the solution to the problem.

(Total for Question 3 is 3 marks)



4 They make apple juice from the apples at the farm.

They sell the juice in cartons of 1 litre and in bottles of 250 ml.



Barry has an order for 500 cartons and 700 bottles of apple juice.

He knows 330 kg of apples make 150 litres of apple juice.

Barry thinks 1600 kg of apples will be enough to make all the juice for the order.

Is Barry correct?
Show why you think this.

(5)

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



A large empty rectangular box with rounded corners, intended for writing an answer.

(Total for Question 4 is 5 marks)

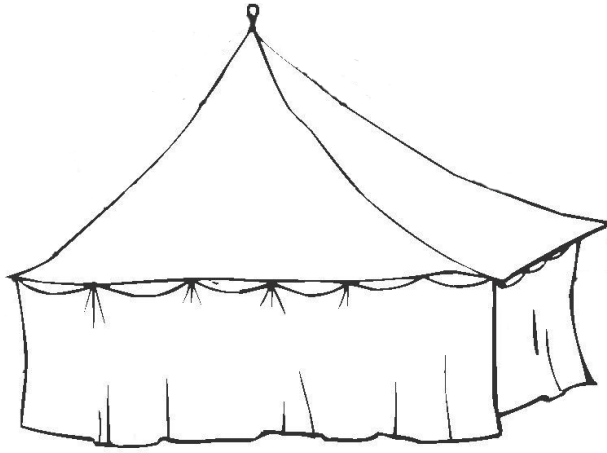


SECTION B: The party

Answer all questions in this section.

Write your answers in the spaces provided.

- 5 Lucy needs to hire a marquee for a party in her garden.



She finds this information from suppliers of marquees.

Party tents

Full price £735
Book online and get
 $\frac{1}{3}$ off full price

Occasions

Marquee hire £395
Add VAT at 20%

She wants to pay the cheapest total cost.

(a) Which supplier should Lucy choose?

(5)



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



A large, empty rectangular box with rounded corners, intended for students to show their work.



Lucy wants to put a dance floor on the garden lawn for the party.

She needs to plan where to put the marquee and the dance floor.

The garden lawn is square and 12 m by 12 m.

She draws a plan of the garden lawn.

The space for the marquee needs to be

- rectangular 6 m by 9 m
- in a corner of the garden lawn.

The dance floor

- is rectangular with an area of 20 m²

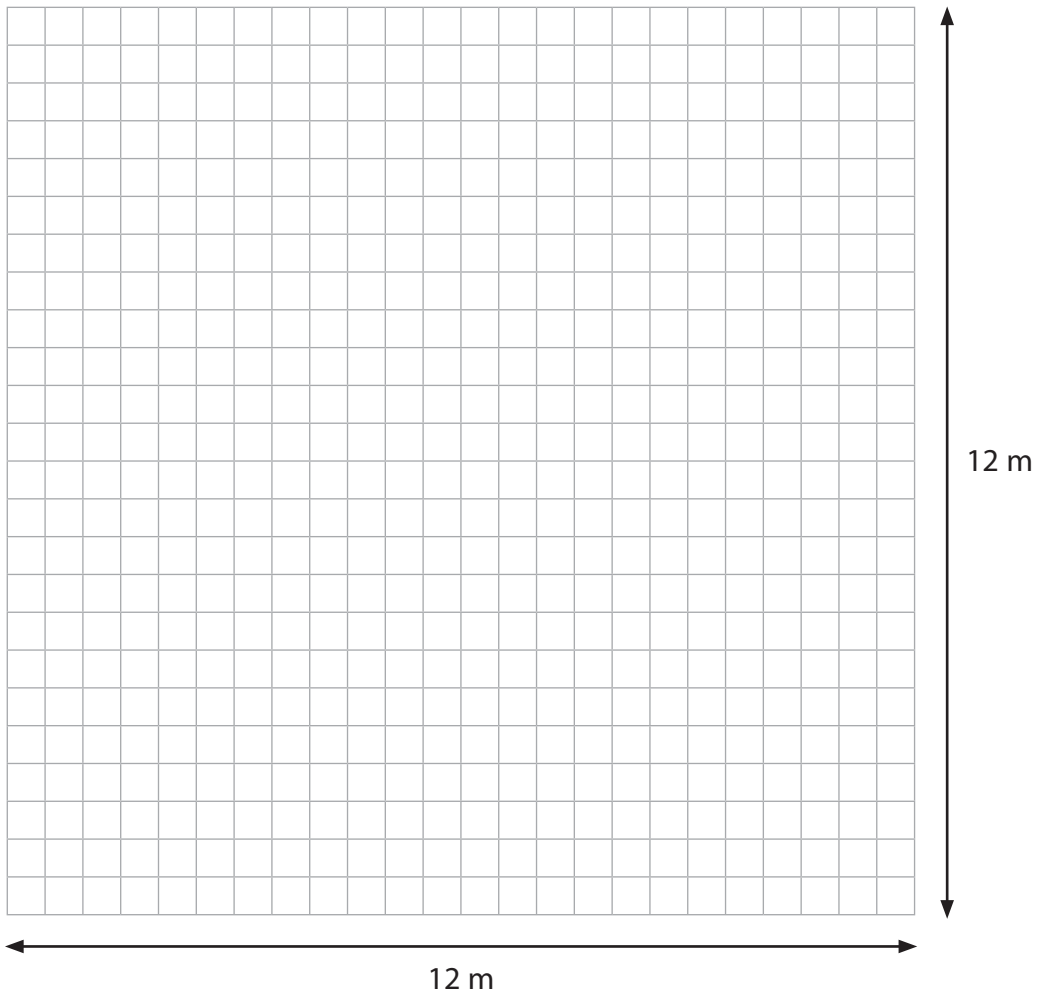
(b) Draw and label the space for the marquee and the dance floor on the plan.
Remember to use the key.

(4)



Key

One square on the plan is 0.5 m by 0.5 m on the garden lawn



(Total for Question 5 is 9 marks)



6 Lucy also has to buy the food for the party.

She needs 85 spring rolls.

There are 10 spring rolls in a pack.

Each pack costs £1.40

The supermarket has a special offer.

**Buy 3 packs of spring rolls
get the 4th pack free**

(a) What does Lucy pay in total for the spring rolls using the special offer?

(4)

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



A large empty rectangular box for writing the solution to the problem.



Lucy is going to make some cakes for the party.
She finds this recipe for lemon cupcakes.

Lemon cupcakes
makes 12 cakes

225 g self-raising flour
175 g caster sugar
zest of 2 lemons
3 eggs
100 g natural yoghurt
150 g butter

Lucy wants to make 30 cupcakes.

She has 500 g of caster sugar.

(b) Does she have enough caster sugar to make 30 cupcakes? (3)

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



(Total for Question 6 is 7 marks)



SECTION C: Soft toys

Answer all questions in this section.

Write your answers in the spaces provided.

7 Magda is going to make soft toy cubes.

She is going to cut squares of material 5 inches by 5 inches to make the cubes.

Magda has some material 148 cm wide.
It is 300 cm long.

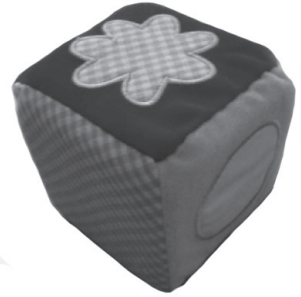
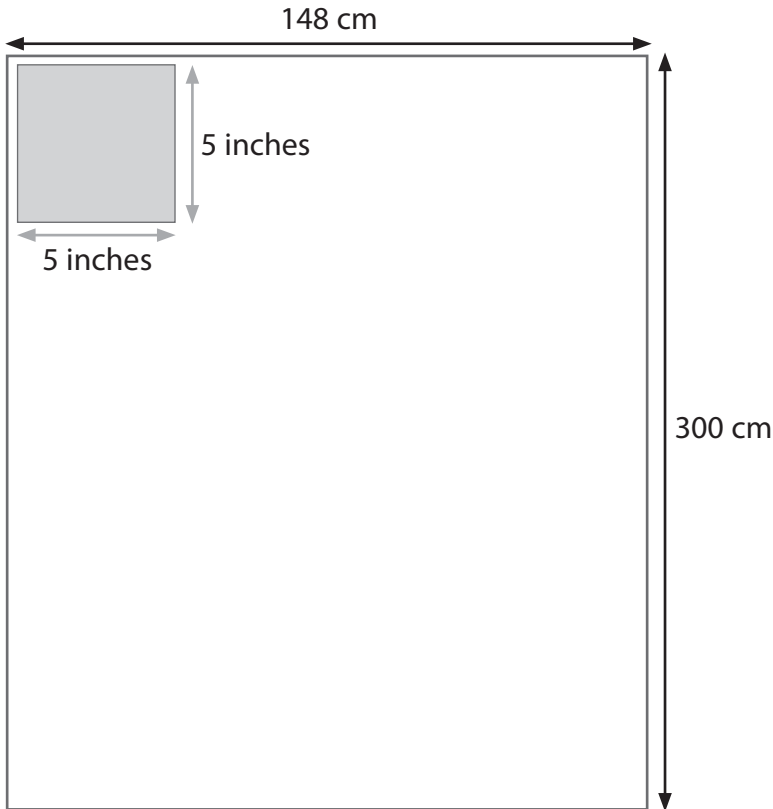


Diagram **NOT**
accurately drawn

Magda wants to know how many of the squares she can cut from this piece of material.

Use 1 inch = 2.5 cm

(a) How many squares can Magda cut from the material?

(4)



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

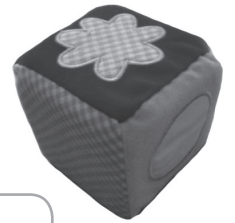


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P 4 4 3 0 0 A 0 1 5 2 0

Magda is going to use squares of different coloured material to make her cube.
The cube is closed.



She needs to know how to join the squares together.

(b) Sketch a net of the cube for Magda.

(1)

Use the box below for your sketch.

Magda makes a soft toy cube for a game.
The cube has 3 red faces.

Magda rolls the cube.

(c) What is the probability that the top face is red?

(2)

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



(Total for Question 7 is 7 marks)



8 Magda also makes and sells teddy bears.

The table shows information about her sales of teddy bears.

Sales of teddy bears (£)					
May	Jun	Jul	Aug	Sep	Oct
£420	£450	£345	£525	£495	?

Magda sets herself a target.

'My mean monthly sales of teddy bears should be £500
over the 6 months from May to October.'

What sales does Magda need in October to meet her target?
Show how you have checked your answer.

(4)

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



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



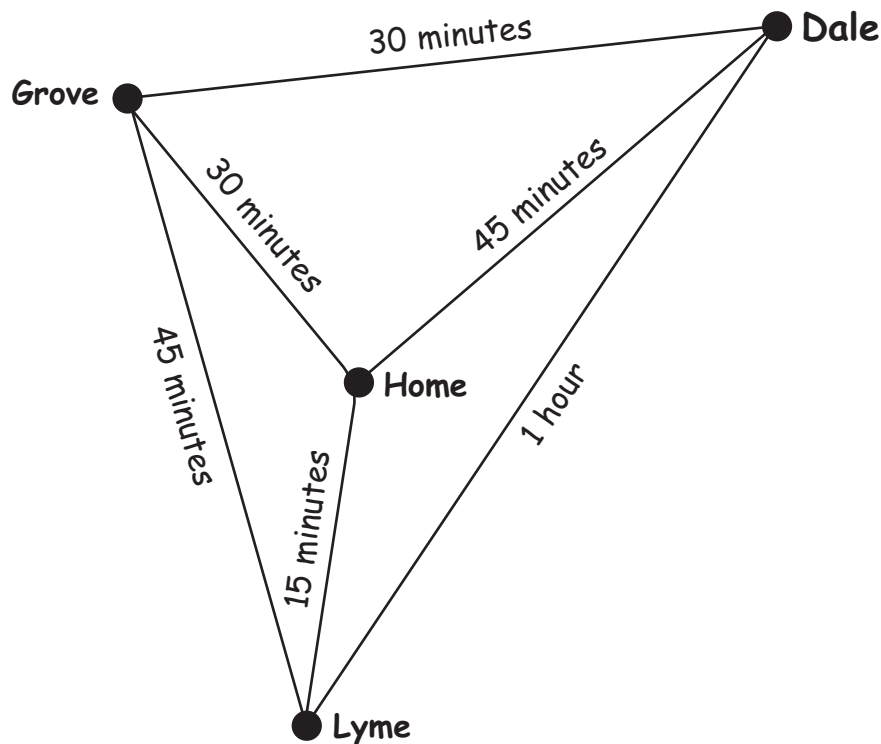
(Total for Question 8 is 4 marks)



9 Magda makes notes about what she has to do on Thursday.

- start work 8 am
- be home and finished by 5 pm
- have 30 minutes for lunch
- make toys at home (needs $1\frac{1}{2}$ hours)
- be at craft fair in Lyme for 2.30 pm start (fair needs 2 hours)
- visit store in Dale (visit needs 45 minutes)
- visit outlets in Grove (visit needs $1\frac{1}{2}$ hours)

The diagram shows the travelling times between her home, Lyme, Dale and Grove.



Magda needs a time plan to fit in everything she has to do on Thursday. The plan must show when she expects to arrive at each place and leave each place, her lunch break and the time she will finish.

Make a time plan for Magda.

(5)



Use the box below to show your time plan.



(Total for Question 9 is 5 marks)

TOTAL FOR PAPER = 48 MARKS



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