Write your name here

Surname	Other names

Edexcel
Functional Skills

Centre Number | | | | | |

Candidate Number | | | | |

Mathematics

Level 2 Mock Test 13

13–17 May 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

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: Cupcake business

Answer all questions in this section.

Write your answers in the spaces provided.

1 Manisha owns a business that makes and sells cupcakes.

She has an order for a large party.
Manisha has to make a total of 400 cupcakes.

Manisha's cupcake recipe makes 24 cupcakes.
The recipe uses 220 g of flour.

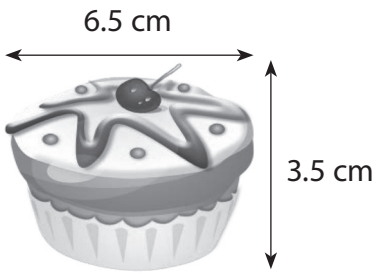
Manisha has 3 kg of flour in her stockroom.

(a) Does Manisha have enough flour to make the 400 cupcakes?

(4)

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

Manisha packs cupcakes in boxes.
She needs a box for 16 cupcakes.
The cupcakes have circular tops.



Each cupcake

- is 6.5 cm across the top
- needs a space 3.5 cm in height.

The box will be in the shape of a cuboid.

(b) Draw a sketch of a box for 16 cupcakes for Manisha.
You must show the dimensions of the box. **(3)**

Draw your sketch in the box below.

(Total for Question 1 is 7 marks)

2 Manisha needs to borrow some money from her bank.
She wants to show the bank manager that her business is doing well.

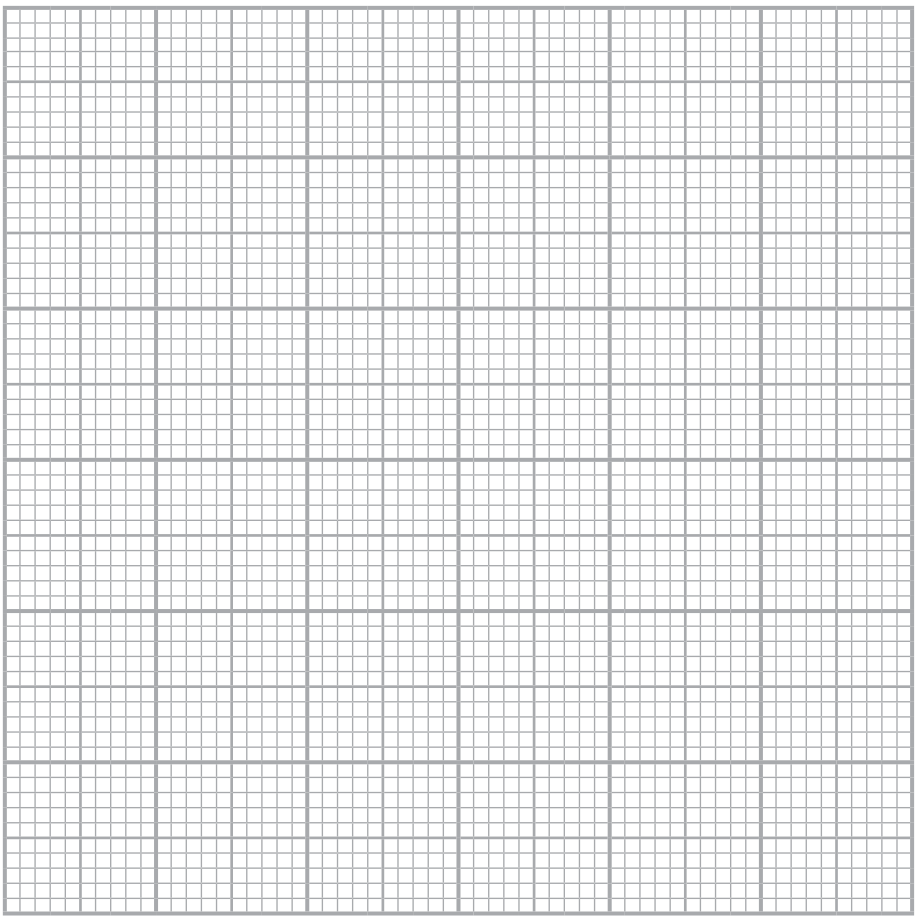
This table shows the profits Manisha made each quarter for the last two years.

	Jan – Mar	**Apr – Jun**	**Jul – Sep**	**Oct – Dec**
2011	£3300	£3400	£3650	£3800
2012	£3400	£3100	£3800	£4200

Manisha is going to display this information.

(a) Draw a graph or chart for Manisha.

(3)



Manisha has to prepare a report for her bank manager.

Here is the table of profits again.

	Jan – Mar	Apr – Jun	Jul – Sep	Oct – Dec
2011	£3300	£3400	£3650	£3800
2012	£3400	£3100	£3800	£4200

Manisha has to interpret this information.

She needs to compare the profits she made in 2011 with the profits she made in 2012

(b) Write a statement to **compare** the profits Manisha made in 2011 with the profits she made in 2012 **(1)**

Write your statement in the box below.

(Total for Question 2 is 4 marks)

3 Manisha advertises a special offer for her cupcakes on a website.
The special offer is for the month of April.

April Special Offer

Buy a gift box
of cupcakes

75% off normal price
(normal price : £26)

The total cost of making a gift box of cupcakes is £4.80

In April, Manisha sold 600 gift boxes at the special offer price.
She usually sells 50 gift boxes at the normal price each month.

Manisha compares her profits from the April special offer with her profits from selling 50 gift boxes at the normal price.

Did Manisha make more profit from the April special offer?
Show why you think this. **(5)**

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

(Total for Question 3 is 5 marks)

SECTION B: Cinema

Answer all questions in this section.

Write your answers in the spaces provided.

4 Mr and Mrs Melton plan to take their 4 children to the Kennedy Cinema.
Mrs Melton finds out this information about ticket prices.

Kennedy Cinema – ticket prices

Weekdays (until 5pm on Friday)

	2D film	3D film
All tickets	£4.50	£6.50

From 5pm on Friday, all day Saturday and all day Sunday

	2D film	3D film
Adults	£6.90	£8.90
Children, students	£5.70	£7.20
Family ticket (2 adults and 2 children)	£24	£30

3D glasses: £1 per pair (all 3D films)

They want to

- go to the cinema on Friday at 18:15
- see a 3D film.

Mr and Mrs Melton need to pay for the tickets and 3D glasses for themselves and their 4 children.

They don't want to spend more than £50

Can Mr and Mrs Melton take their children to see a 3D film at 18:15 on Friday night for less than £50? **(3)**

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

(Total for Question 4 is 3 marks)

5 Adam is the manager of the Kennedy Cinema.
He needs to work out what times to show the films this week.

Screen number	Film	Time needed for film	Show information
1	Dark Shadow	104 minutes	2 shows First show at 18:15
2	Mr Marvel	142 minutes	2 shows First show at 17:30

Adam knows that

- all films must finish by 23:00
- there must be a gap of at least 15 minutes between the end of each film and the time it is shown again
- there must be at least 15 minutes between the start times of the films.

Adam needs a schedule to show

- the name of each film
- all the start times of the films.

Make a schedule for Adam.
Check that your schedule works. **(4)**

Write your schedule in the box below.

(Total for Question 5 is 4 marks)

6 A film club is going to show a film at the cinema for a charity event.

Each ticket for the charity event is £7.80

The charity will get $\frac{1}{3}$ of the money from each ticket.

The charity needs £290 for a new project.

The film club sells 120 tickets.

(a) Will the charity get enough money for the project?

(4)

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

The price of the ticket to the charity event includes a glass of sparkling grape juice.

Each glass holds 125 ml.

A bottle of sparkling grape juice holds 750 ml.

(b) How many bottles are needed for 120 guests?

(3)

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

There is a raffle at the charity event to raise more money.
There is only one raffle prize.

160 raffle tickets are sold.
Scott buys 5 of these tickets.

(c) What is the probability that Scott will win the raffle prize?

(2)

Write your answer in the box below.

(Total for Question 6 is 9 marks)

SECTION C: Healthy living

Answer all questions in this section.

Write your answers in the spaces provided.

7 Jackie wants to do more exercise.
She works out an exercise plan.

	Type of exercise	Time
Monday	Walk	50 minutes
Tuesday	Exercise class	1 hour
Wednesday	Swim	30 minutes
Wednesday	Dancing	1 hour 30 minutes
Thursday	–	–
Friday	Swim	30 minutes
Saturday	Walk	50 minutes
Sunday	–	–

Jackie's target is to exercise for at least 5 hours each week.

(a) Does Jackie's plan have enough exercise time to meet her target?

(2)

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

Jackie keeps a record of the total number of lengths of the pool she swims each week in February.

	Week 1	Week 2	Week 3	Week 4
Lengths	94	83	79	68

Each length of the pool is 25 m.

Jackie says,

'I swam a mean average of more than 2 km each week in February.'

(b) Is Jackie correct?
Show why you think this.

You must show a check for your answer. **(4)**

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

(Total for Question 7 is 6 marks)

8 Jackie wants to have a healthy body mass index (BMI).

$$\text{BMI} = \frac{w}{h^2}$$

w = weight in kilograms
h = height in metres

Jackie's height is 1.73 metres.

Her weight is 90 kilograms.
Jackie plans to lose 10% of her weight.

A healthy BMI for Jackie is in the range 20 to 25

She thinks that if she loses 10% of her weight she will have a healthy BMI.

Is Jackie correct?
Show why you think this. **(5)**

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

(Total for Question 8 is 5 marks)

9 Jackie goes on a diet to lose weight.

She keeps a record of the number of calories from her food and drink.

Day	Number of calories from food and drink
Monday	1280
Tuesday	1390
Wednesday	1630
Thursday	1340
Friday	1050
Saturday	1860
Sunday	

Jackie wants to make sure her mean average number of calories is no more than 1500 per day for this week.

She needs to know the maximum number of calories she can have on Sunday.

(a) What is the maximum number of calories Jackie can have on Sunday?

(2)

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

Jackie is going to go cycling on Sunday.
She finds this information.

Number of calories you use in 1 hour of cycling

	Body weight up to			
Cycling average speed	**130 pounds**	**155 pounds**	**180 pounds**	**205 pounds**
10 – 11.9 mph	354 calories	422 calories	490 calories	558 calories
12 – 13.9 mph	472 calories	563 calories	654 calories	745 calories
14 – 15.9 mph	590 calories	704 calories	817 calories	931 calories

Jackie has a body weight of 90 kilograms.
She knows that 1 kilogram = 2.2 pounds.

Jackie is going to cycle for $2\frac{1}{2}$ hours at an average speed of 11 mph.

(b) How many calories will Jackie use?

(3)

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

(Total for Question 9 is 5 marks)

TOTAL FOR PAPER IS 48 MARKS

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