

Write your name here

Surname

Other names

Edexcel
Functional Skills

Centre Number

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Candidate Number

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Mathematics

Level 2



4–8 February 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 ►

P42441A

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PEARSON

SECTION A: Dog kennels

Answer all questions in this section.

Write your answers in the spaces provided.

- 1 Alan owns boarding kennels for dogs.
Dog owners pay to have their dogs looked after when they are away.

Alan's bank lets him have an overdraft of up to £5000
This means he can owe the bank up to £5000

If he owes the bank more than £5000 he must pay a penalty charge.

Alan's bank balance is – £3754

He pays these bills from his bank account.

Vet's fee	£829
Dog food	£420

(a) Does Alan have to pay the bank a penalty charge?

(2)

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



Alan has these booking requests for large dogs to stay next week.

Dog's name	Nights requested
Capo	Mon, Tue
Butch	Wed, Thu, Fri, Sat, Sun
Honey	Sat
Fido	Thu, Fri
Mitzi	Mon, Tue, Wed, Thu
Rover	Tue, Wed
Peggy	Thu, Fri, Sat

Alan has a booking sheet that shows the kennels with space for large dogs next week.

He may not be able to accept all of the booking requests.

Only one dog can be booked in each slot on the booking sheet.

Alan can only accept a booking if all the nights requested are available.

The booking sheet must show all the nights a dog is booked in a kennel.

Alan wants to book as many slots as possible.

(b) Complete the booking sheet for Alan.

(3)

Nights	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Kennel A							
Kennel B							
Kennel C							
Kennel D							
Kennel E							

Key Kennel slot already booked

(Total for Question 1 is 5 marks)



- 2 Alan increases the prices for dogs to stay at the kennels.
He raises the price for a large dog from £14.50 to £16.95 per night.

A dog owner says 'that is more than a 15% increase.'

(a) Is the dog owner correct?

(3)

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



There is a wire mesh perimeter fence around the space for the dogs to play.
Alan is going to replace the fence.

The space is rectangular 70 feet by 40 feet.
Alan has a roll of wire mesh fencing 50 metres long.

He knows this formula to change between feet and metres.

$$M = \frac{3F}{10}$$

M is the number of metres
F is the number of feet

(b) Does Alan have enough wire mesh to replace the perimeter fence?

(3)



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



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

(Total for Question 2 is 6 marks)



3 Alan needs to have food for 55 dogs.
He does his calculations using 400 to 500 grams of food per dog each day.

On Friday night after the dogs have been fed Alan checks his supplies of dog food.

Alan has 12 bags of food.
Each bag contains 15 kg of food.

His next dog food delivery will be early next Friday before the dogs are fed.

Does Alan have enough food for 55 dogs?

(5)

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



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



Blank area for writing the answer to Question 3.

(Total for Question 3 is 5 marks)

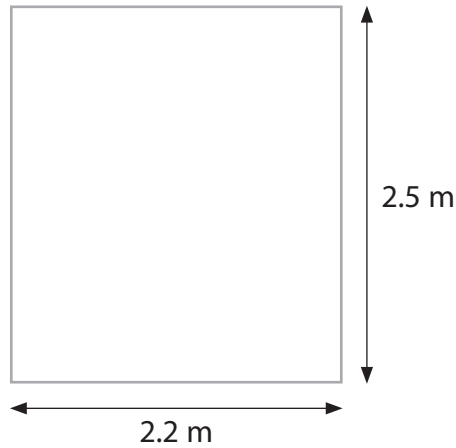


SECTION B: A new bathroom

Answer all questions in this section.

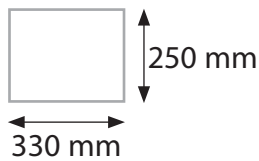
Write your answers in the spaces provided.

- 4 Hajra is going to have new floor tiles put on her bathroom floor.
The bathroom floor is rectangular 2.2 m by 2.5 m



Diagrams **NOT**
accurately drawn

The floor tiles Hajra chooses are 330 mm long by 250 mm wide.



She buys 8 boxes of floor tiles.
There are 9 floor tiles in each box.

The tiles can be cut but the spare pieces must be thrown away.

Does Hajra have enough floor tiles?

(5)



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



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

(Total for Question 4 is 5 marks)



5 Hajra buys a new bath, basin and toilet.

The bath

- needs a rectangular floor space 170 cm by 70 cm
- must go in a corner of the room.

The basin

- needs a rectangular floor space 60 cm by 50 cm
- must be at least 60 cm from the edge of the space for the toilet.

The bathroom floor is rectangular 2.2 m by 2.5 m

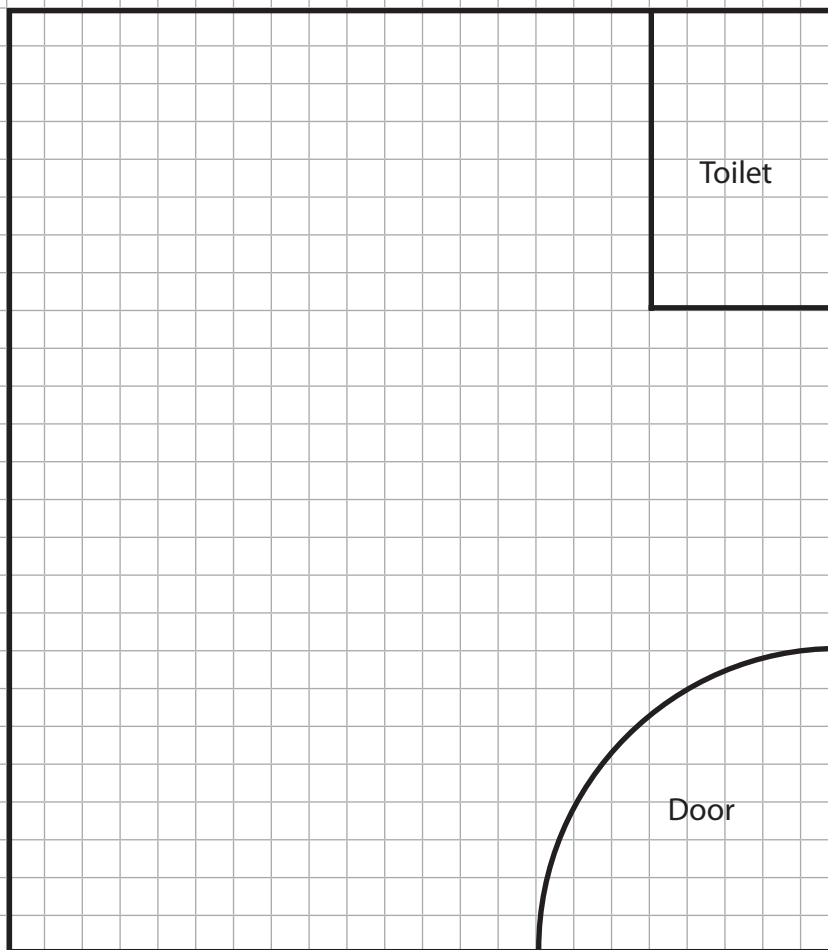
Hajra makes a plan of the bathroom to show where the bath and the basin can go.
She draws the walls and door of the bathroom and the space for the toilet on a grid.

Draw the bath and the basin on the grid.
Check that you have used the key.

(4)



Key: 1 cm on the plan is 20 cm in the bathroom.



(Total for Question 5 is 4 marks)



6 Hajra sees bathroom wall tiles that she likes in two stores.

Tile Warehouse
Wall tiles £12.80 per box
Buy 3 boxes and get the 4th box free

Decor Styles
Wall tiles £19.50 per box
All wall tiles half price

Hajra needs 16 boxes of wall tiles.
She wants to pay the cheapest total cost.

(a) Which store should Hajra buy the tiles from? (4)

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



Terry is a plumber.

Terry gives Hajra a quote to do all the work in the bathroom.

He says

It will take me 6 days to do all the work.
I charge £340 per day
then add VAT at 20% to get the total cost.

Hajra has a budget of £2500 to pay a plumber.

(b) Can Hajra afford Terry's total cost?

(3)

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



A large empty rectangular box for writing the answer and showing the calculation.

(Total for Question 6 is 7 marks)



SECTION C: The charity

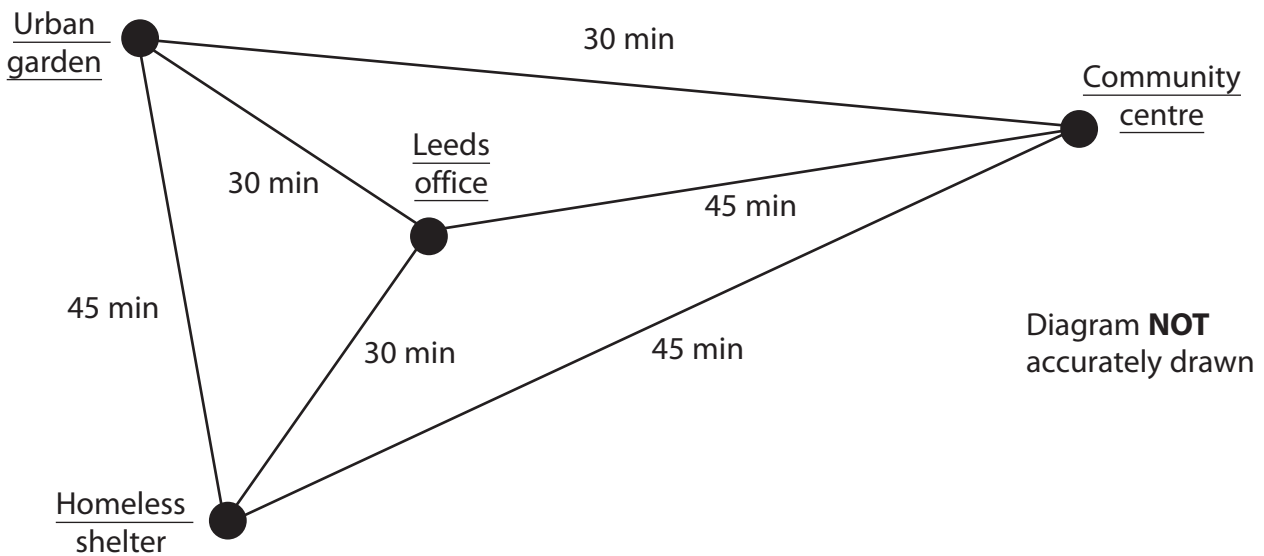
Answer all questions in this section.

Write your answers in the spaces provided.

- 7 Fiona works for a charity.
Her office is in Leeds.
She makes notes about what she has to do on Monday.

Start at 9 am at Leeds office
Finish by 6 pm
Lunch - 30 to 45 minutes - between twelve noon and 2 pm
Community centre - meeting at 2 pm - 1 hour
Work in Leeds office - $1\frac{1}{2}$ hours
Urban garden - tour & talk - 2 hours
Homeless shelter - review finances - $1\frac{1}{2}$ hours

The diagram below shows the travelling times in minutes between these places.



Fiona needs a time plan to fit in all of Monday's work.
It must show the start time and the finish time at each place.
It must also show the time for her lunch break and the time she will finish work.

Make a time plan for Fiona.
Remember to check your time plan.

(5)



Use the box below to show your time plan.

(Total for Question 7 is 5 marks)



- 8 The charity raises money to spend on projects around the world. Here is information about the money raised in February 2011 and in February 2012 and the location of the projects.

Project location	Europe (£)	Africa (£)	Asia (£)	America (£)
February 2011	360	1100	1000	260
February 2012	1000	2500	1500	80

Fiona needs to write a report to interpret the information for the March monthly meeting.

(a) Write **two** different statements to interpret and compare the information.

(2)

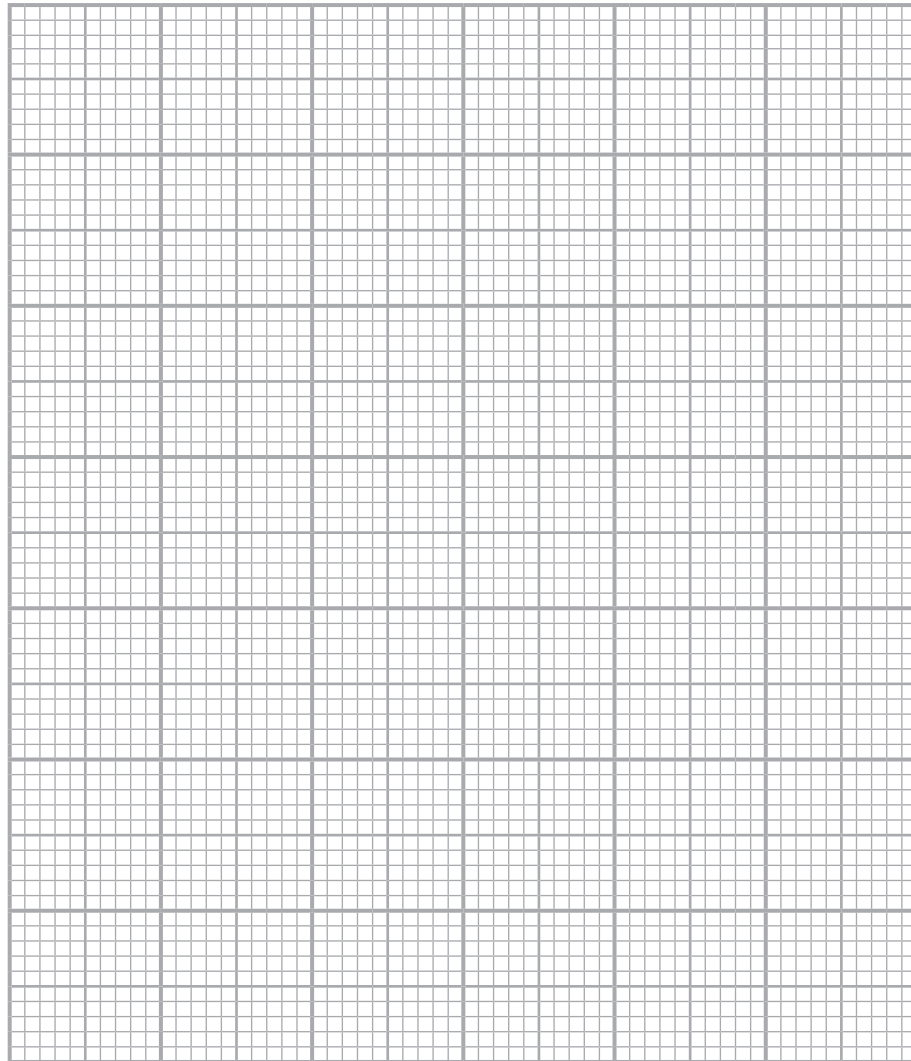
Write your statements in the box below.

Fiona also needs to display the information for the meeting.

(b) Draw a graph or chart for Fiona.

(3)





(Total for Question 8 is 5 marks)



- 9 Fiona also has this information about the total amount raised and the number of projects for each of the last three years.

	2010	2011	2012
Total amount raised (£)	41 344	179 285	460 225
Number of projects	38	100	201

Fiona calculates that the average amount raised per project in 2010 was £1088
Her calculation is correct.

Fiona writes this statement in her report.

'The average amount raised per project is increasing every year.'

- (a) Is Fiona's statement correct?
Show why you think this.

(3)

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



Dan raises money for the charity.
He raises £720 for a project to start a child care centre in an Indian village.

The total amount the project needs is 65 000 Indian rupees.

Use £1 = 87.94 Indian rupees

(b) Has Dan raised all the money the project needs?
Show how you have checked your answer.

(3)

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



A large empty rectangular box for writing the answer.

(Total for Question 9 is 6 marks)

TOTAL FOR PAPER IS 48 MARKS



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