

Write your name here


Surname	Other names
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Edexcel Functional Skills

Centre Number	Candidate Number
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Mathematics

Level 2



15–19 November 2010 Time: 1 hour 30 minutes	Paper Reference FSM02/01
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You must have: Pen, calculator, HB pencil, eraser, ruler graduated in cm and mm, protractor, compasses.	Total Marks
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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 got your answers as 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.

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Turn over ►

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Section A: Making cushions

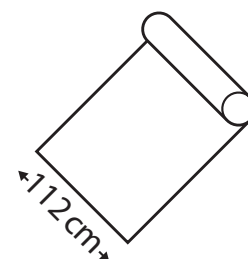
Answer all questions in this section.

Write your answers in the spaces provided.

1 Rebecca makes cushions.

She uses squares of fabric 37 cm by 37 cm.

Rebecca buys a roll of fabric which has a width of 112 cm.



(a) How many squares can she fit across the width of the fabric?

(2)

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



Rebecca needs 2 squares of fabric to make each cushion.

The roll of fabric is 22 m long.

(b) How many cushions can Rebecca make out of the roll of fabric? (3)

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



(Total for Question 1 is 5 marks)



2 Rebecca receives an order from a shop for 120 cushions.

It usually takes her 50 minutes to make a cushion.

Rebecca makes cushions for 6 hours per day.

(a) How many days will Rebecca need to complete the order?

(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.



The fabric to make 120 cushions costs £236

Rebecca's other costs are £8.65 per cushion.

She wants to make 50% profit on the sale of the cushions.

(b) What should Rebecca charge for each cushion?

(4)

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



(Total for Question 2 is 7 marks)



3 Rebecca hires a company to deliver some cushions.

The company charges £26.50 per hour, plus 20p per mile.

The delivery takes 3 hours.

The driver writes down his mileage before and after he has made the delivery.

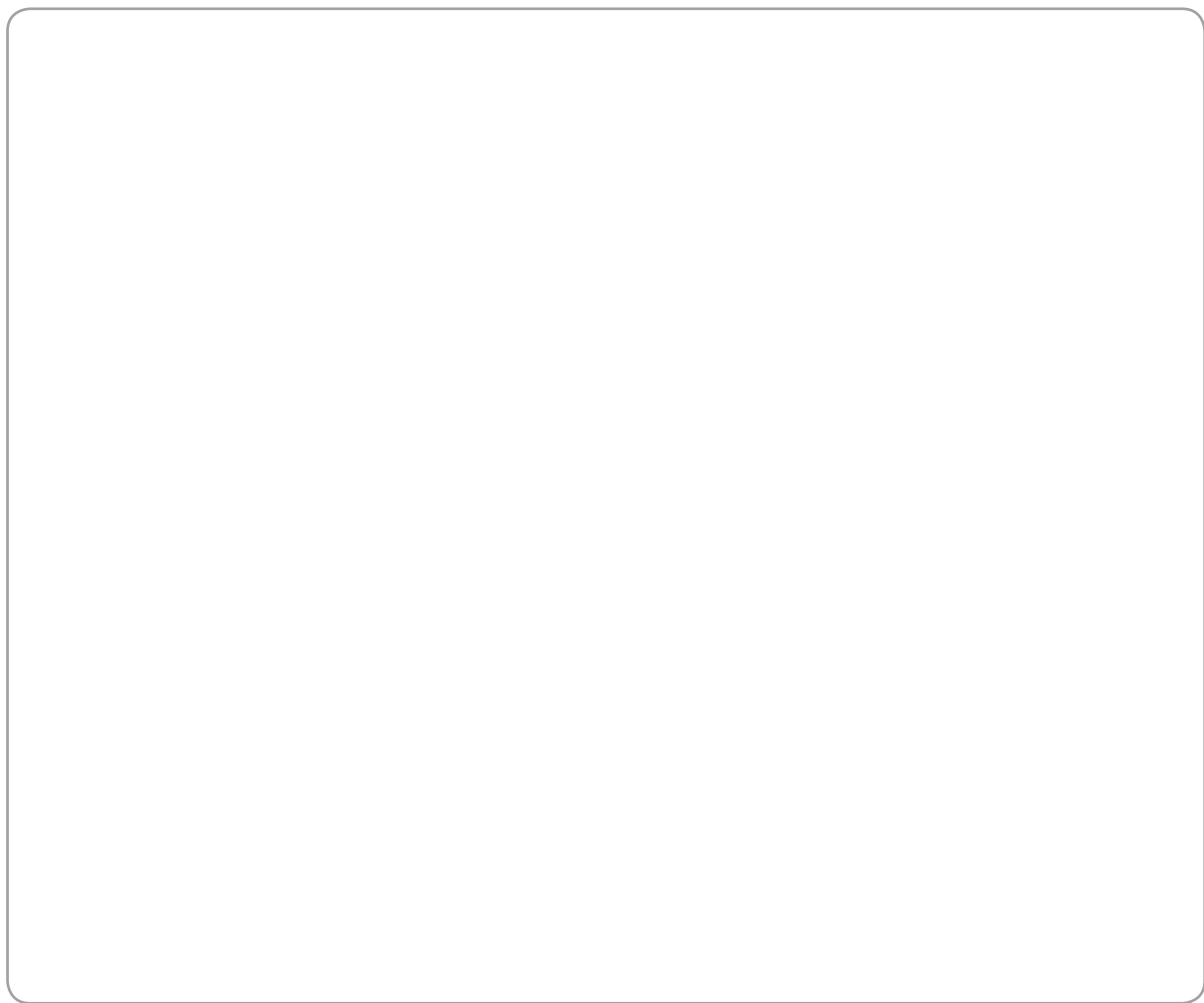
Before 1 5 5 8 2 miles

After 1 5 7 1 5 miles

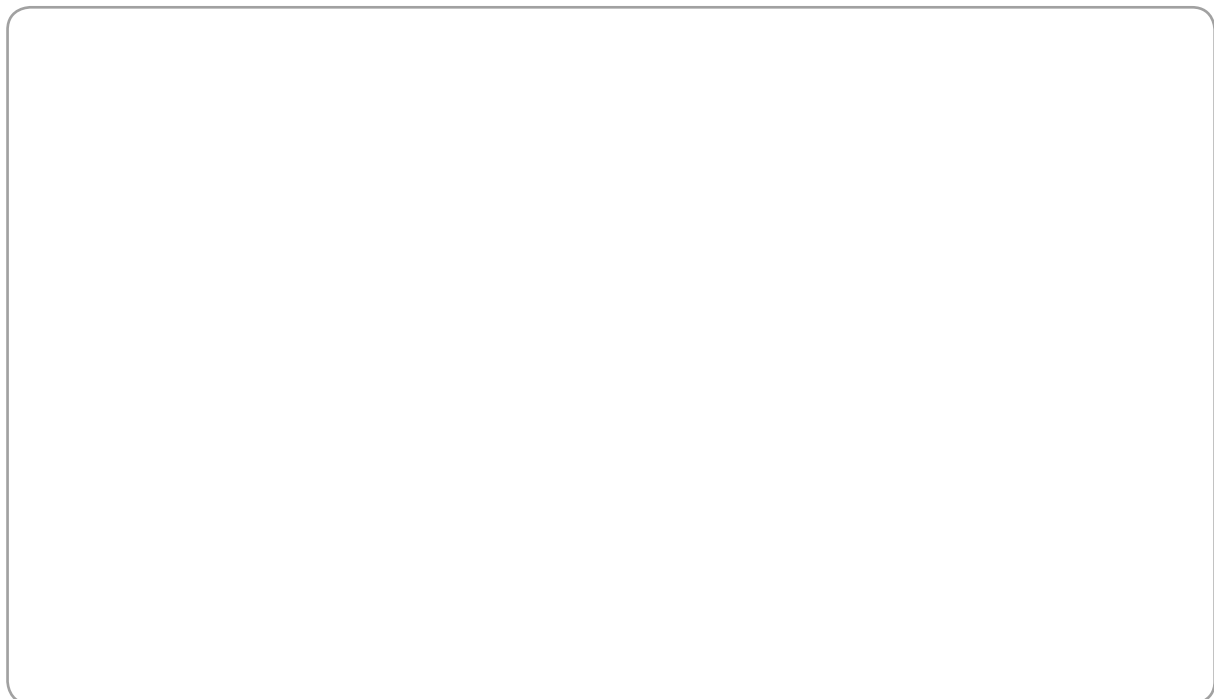
(a) How much does the company charge to make the delivery? (3)

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





(b) Show how you can **check** your answer in the box below. (1)



(Total for Question 3 is 4 marks)



Section B: Running

Answer all questions in this section.

Write your answers in the spaces provided.

- 4** Four people join a running club.
Each person runs a 5 km race four times.
The table shows how long each person takes to complete the race.

The running times are shown in minutes and seconds.

Runner	Week 1	Week 2	Week 3	Week 4
Ali	27:31	28:12	27:59	29:50
Barry	27:49	27:40	28:02	28:35
Caz	28:09	27:52	29:10	28:46
David	27:59	28:05	28:40	28:44

The club coach says that David is the most consistent runner.

Do you agree with this statement?
Explain your answer.

(4)

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



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(Total for Question 4 is 4 marks)



H 3 7 6 1 0 A 0 9 2 0

5 David finds the following information.

What to drink before training

15-20 fluid ounces of water 2-3 hours before training.

8-10 fluid ounces of water 10-15 minutes before training.

What to drink during training

8-10 fluid ounces of sports drink every quarter of an hour.

(a) How much water should he drink **before** training?
Explain your answer.

(2)

Use the box below to show your answer clearly.



A large empty rectangular box for writing the answer.



David plans to train for 3 hours on Saturday.

He buys sports drink in 1 litre bottles.

1 litre is approximately 35 fluid ounces.

David needs to know how many bottles he will need during 3 hours training.

(b) How many bottles of sports drink will David need **during** 3 hours training? (4)

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



(Total for Question 5 is 6 marks)



H 3 7 6 1 0 A 0 1 1 2 0

- 6 Roger works at the running club.
He needs to lay a new running track.
The track must have two straights and two semi-circular ends.

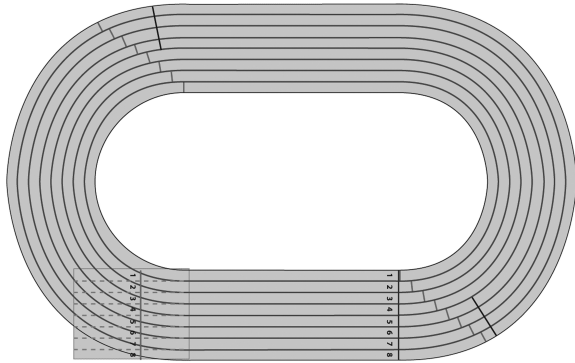


Diagram **NOT** accurately drawn.

The inside lane of the running track must be 400 m long.
Roger will use a radius of 38 m for each semi-circular end of the inside lane.

He uses this formula for the length of a lane.

$$L = 6.28R + 2T$$

L = the length of the lane
R = the radius of each semi-circle
T = the length of each straight

Roger needs to work out the length of each straight on the inside lane.

What length should Roger use for each of the straights?

(6)

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



(Total for Question 6 is 6 marks)



Section C: Bilal's new car

Answer all questions in this section.

Write your answers in the spaces provided.

7 Bilal needs to buy a new car.

He finds information about the running costs of two cars.

	Car P	Car Q
Insurance	£500 payable in April	£50 payable every month
Service & MOT	£250 due in March	£300 due in February
Car Tax	£125 payable in June	£205 payable in April
Petrol	£70 per month	£60 per month

Bilal wants to compare the running costs month by month for these two cars.

(a) Design a suitable table for Bilal to use and complete it for 6 months starting in January. (5)

Use the boxes for your table and calculations.



Bilal compares the monthly running costs for the cars.

(b) Write **two** statements to compare the monthly running costs for Bilal. (2)

(Total for Question 7 is 7 marks)



8 Bilal wants to find the cheapest price for a car.

He finds some information about the cost from three different car dealers.

Able Motors
Special Offer
Cash price
£8 795

Better Cars
Deposit £1 000
plus
36 monthly payments
of £286.15

Casey's Autos
Deposit £500
plus
48 monthly payments
of £175

Bilal wants to pay the cheapest total price.

Which car dealer should Bilal choose?

(4)

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



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(Total for Question 8 is 4 marks)

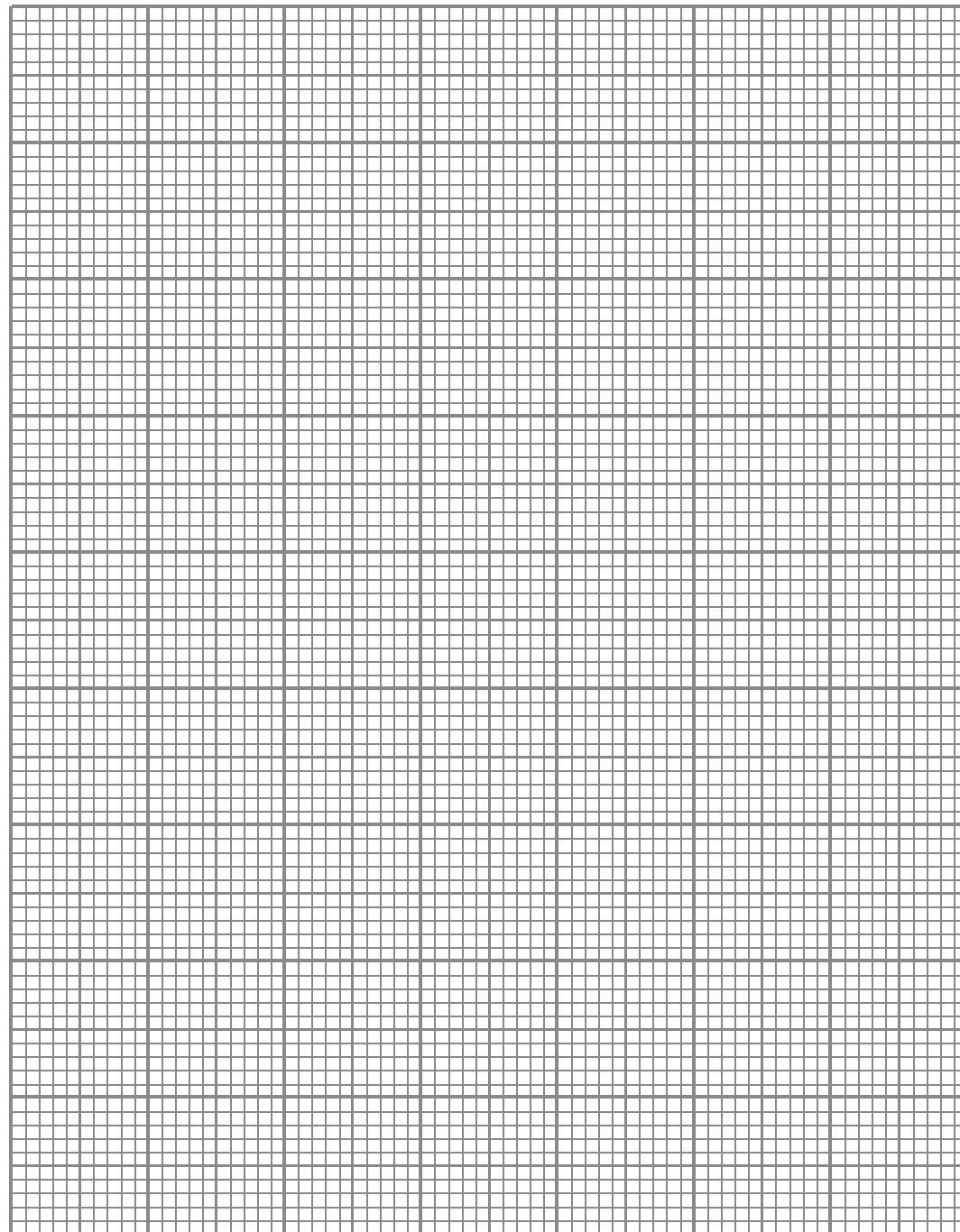


- 9 Bilal finds information about the value of some cars over time.
The table shows the values of a car which cost £8500 when new.

NEW	YEAR 1	YEAR 2	YEAR 3	YEAR 4
£8500	£5500	£4600	£3750	£3150

Bilal's new car costs £8500.
He wants to use this information to see how the value of the car will change, over time.

- (a) Draw a graph Bilal could use. (3)



Bilal wants to sell the car after 2.5 years.

(b) How much should Bilal expect to sell the car for?

(2)



A large, empty rectangular box with rounded corners, intended for the student to write their answer to the question.

(Total for Question 9 is 5 marks)

TOTAL FOR PAPER IS 48 MARKS



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