

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



21–25 July 2014

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: America

Answer all questions in this section.

Write your answers in the spaces provided.

1 Jaz and Kim are on holiday in America.

They are going to visit the Open Air Museum in Williamsburg.

Jaz knows they can buy tickets

- at the museum for \$49.95 each
- at the hotel for \$33.56 each.

Jaz says

'If we buy the tickets at the hotel we will save $\frac{1}{3}$ of the cost of buying them at the museum.'

(a) Is Jaz 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.

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Jaz checks the weather forecast for Williamsburg.
The temperature forecast for Tuesday is 65°F.

Jaz wants to know if it is going to be warmer in London.
The temperature forecast for London on Tuesday is 16°C.

Jaz uses this formula to change between °C and °F.

$$C = \frac{5}{9} \times (F - 32)$$

C is temperature in °C
 F is temperature in °F

(b) Is the temperature forecast warmer for London or for Williamsburg?

(3)

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



(Total for Question 1 is 6 marks)



2 On the way to the Open Air Museum Jaz and Kim stop to buy petrol.

The petrol costs \$3.15 for one US gallon.

Kim wants to compare the cost of petrol in America with the cost of petrol in England.

Kim uses this information

- 1 US gallon = 3.875 litres
- 1 litre of petrol in England costs £1.37
- £1 = \$1.60

Kim says that the price of petrol in England is more than 2 times the price of petrol in America.

Is Kim correct?
Show why you think this.

(6)



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



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(Total for Question 2 is 6 marks)



- 3 Jaz and Kim are going to drive to the airport to go home.
They want to go to the Air and Space Museum near the airport.

Kim makes some notes of the things to do before they check in at the airport.

- leave hotel
- drive 140 miles to museum – average speed 60 miles per hour
- spend 3 hours at museum
- drive to airport, fill car with petrol, return car to hire company – allow 45 minutes

They want to check in at the airport by 15:30

What is the latest time they can leave the hotel?

(4)



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



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(Total for Question 3 is 4 marks)



SECTION B: Book shop

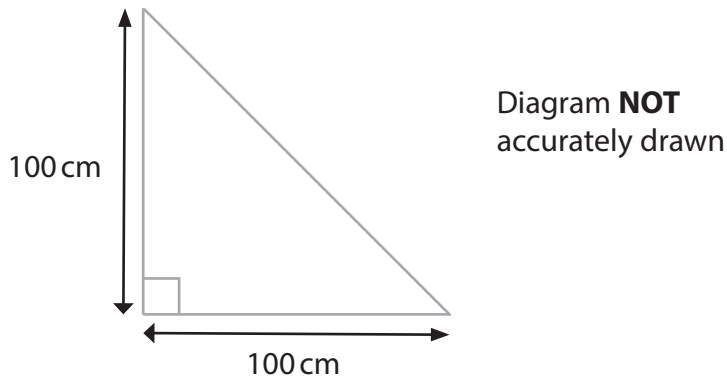
Answer all questions in this section.

Write your answers in the spaces provided.

4 Paul owns a book shop.

Paul wants to buy some tables for customers to sit at.
He sees the table he wants online.

The top of each table is in the shape of a right-angled triangle.

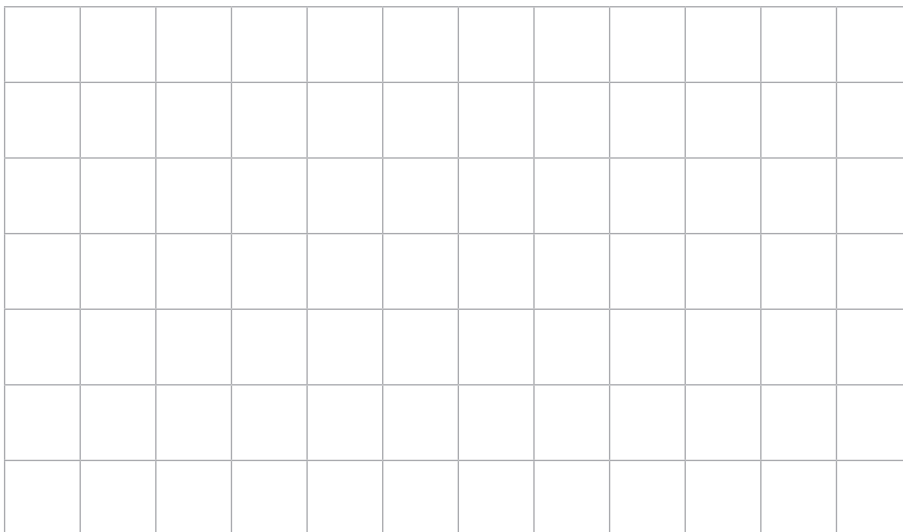


Paul wants to check that 2 chairs could fit on the longest side of the table.
He knows that each chair needs 60 cm along the side of the table.

Paul draws a plan of the table to find the length of the longest side.

Draw a plan of the table for Paul and find the length of the longest side.
Will 2 chairs fit on the longest side of the table?

(6)



Key: 1 cm on the grid represents 20 cm

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



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(Total for Question 4 is 6 marks)



- 5 Paul organises a talk by the writer of a bestselling book.
The talk is going to be at a local hall.

The hall has 450 seats.

It costs £725 to hire the hall.

The other costs come to a total of £260

Paul gives 20 free tickets to each of 4 local schools.

He knows that he will sell all the rest of the tickets.

Paul needs to work out how much to charge for the tickets he is going to sell.

The money from the ticket sales has to pay the hire charge and the other costs.

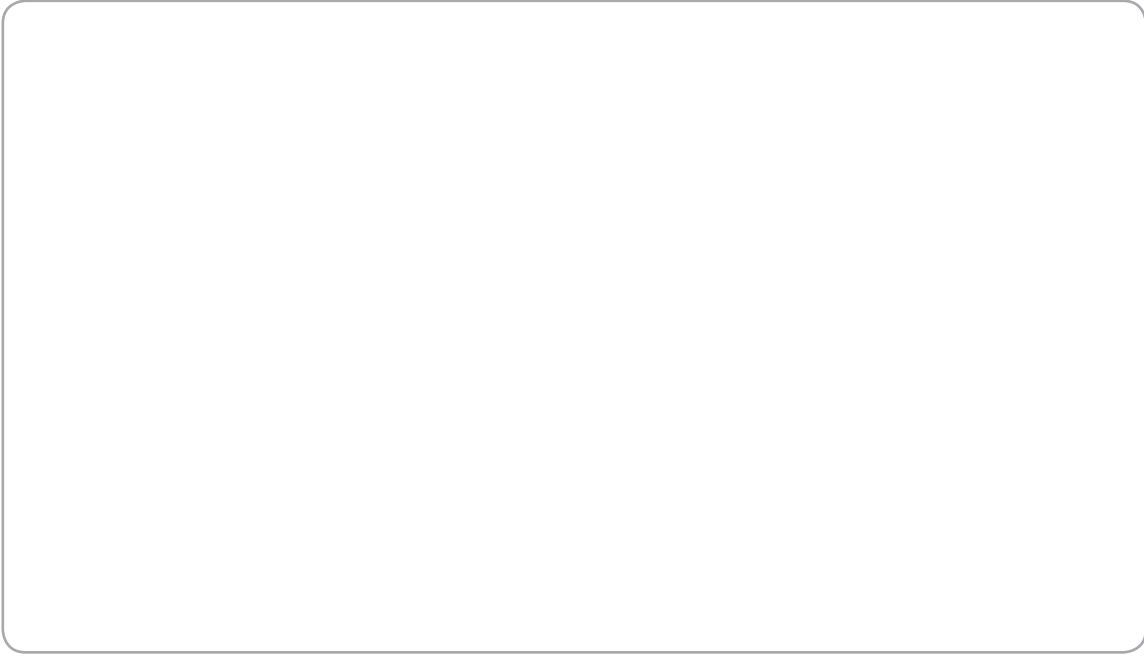
- (a) Work out the smallest amount Paul can charge for a ticket.
You must show how you have checked your answer.

(4)

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



Use the box below to show a check for your answer.



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Sunita organises drinks for the talk.

Each person is going to get a glass of orange juice.
Sunita needs enough orange juice for 450 people.

There are 1.5 litres of orange juice in each bottle.
Sunita puts 200 ml of orange juice in each glass.

She has 50 bottles of orange juice.

(b) Does Sunita have enough orange juice for 450 people? (4)

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



(Total for Question 5 is 8 marks)



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6 Mary goes to the talk with her book group.
Each person at the talk has one raffle ticket.
The writer signs a copy of the book for the person with the winning ticket.

There are a total of 450 people at the talk.
There are 6 people in Mary's book group.

Mary thinks that the probability that one of her group will win the raffle is $\frac{1}{60}$

Is Mary correct?
Show why you think this. (2)

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



Large empty box for showing the solution.

(Total for Question 6 is 2 marks)



SECTION C: Home maintenance

Answer all questions in this section.

Write your answers in the spaces provided.

- 7** Mrs Smith needs a new hot water tank in her house.
She phones a plumber for a price.

The plumber says the price is £525 plus VAT.

VAT is 20%.

(a) Work out the total cost to replace the hot water tank.

(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.

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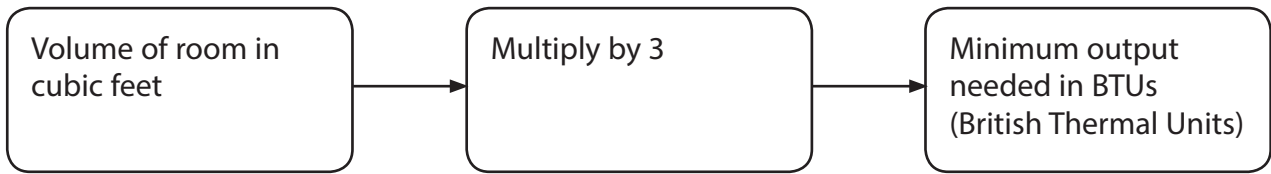
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Mrs Smith needs to buy a new radiator for her kitchen.

She finds this information on the internet to help her work out which radiator to buy.



She also finds information about two different radiators.

Radiator	Size	BTUs	Price
KR22	600 mm by 1000 mm	6104	£68.49
KR11	600 mm by 1000 mm	3502	£42.99

Mrs Smith works out that the volume of her kitchen is 1270 cubic feet.

She decides to buy the KR22 radiator.

(b) Is this radiator suitable for Mrs Smith's kitchen?
Show why you think this.

(3)

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



(Total for Question 7 is 6 marks)



- 8 Mrs Smith wants to compare the amount of gas she uses with the amount of gas used by similar houses in her local area.

Mrs Smith knows the amount of gas she used each quarter last year.

Quarter	Amount of gas used (kWh)
Jan – Mar	8177
Apr – Jun	5741
Jul – Sep	2033
Oct – Dec	8400

She finds this information on the website of her gas company.

Similar houses in your local area
used a mean average of 1352 kWh of gas per month

Compare the amount of gas used by Mrs Smith with the amount of gas used by similar houses in the local area. (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 Mrs Smith needs new flooring for a room in her house.

She needs to work out the area for the flooring.
She draws a sketch of the floor.

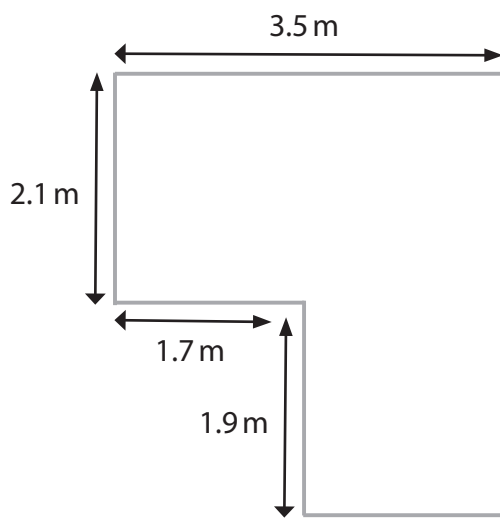


Diagram **NOT** accurately drawn

Mrs Smith buys 15 packs of flooring.
Each pack covers 0.88 m^2 .

Does Mrs Smith have enough flooring for the room? (6)

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



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(Total for Question 9 is 6 marks)

TOTAL FOR PAPER IS 48 MARKS



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