

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



5 – 9 February 2018

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 a **black** 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 to how much time to spend on each question.*
- **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.**
- **This sign shows where marks will be awarded for showing your check.**



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: Adventure holiday

Answer all questions in this section.

Write your answers in the spaces provided.

- 1 Scott is the leader of a group on an adventure holiday to Morocco.

One night on the holiday the lowest temperature in the desert was -5°C .
The warmest temperature on that day was 16°C .

Scott wants to know the difference between these two temperatures.

Work out the difference between the two temperatures.
Show a check of your working.

(3)

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

Use the box below to show your check.



(Total for Question 1 is 3 marks)

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2 Scott withdraws 2000 Moroccan dirham from a cash machine in Morocco.

These are the charges that Scott has to pay.

- 2.75% of the cash he withdraws for changing currency.
- 3% of the cash he withdraws for using a cash machine in Morocco.

Scott has to pay both charges in British pounds.

1 British pound = 12.74 Moroccan dirham

What is the total of the charges in British pounds that Scott has to pay?

(4)

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

(Total for Question 2 is 4 marks)



3 Scott has this information about the 18 people in the group.

Gender	Age in years	Number of trips abroad
Female	22	6
Male	38	12
Female	21	4
Male	32	8
Female	46	7
Female	18	3
Male	23	9
Male	28	9
Female	33	11
Male	36	15
Male	27	7
Female	17	2
Male	23	1
Male	25	6
Female	29	8
Female	29	10
Male	31	13
Male	24	7

Scott wants to use a data summary table to sort this information.

He is going to sort the people by

Gender	male, female
Age	under 26, 26 and over
Trips abroad	fewer than 6, 6 or more.

(a) Design and complete a data summary table for Scott.

(5)

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Abby, Belle and Zak are part of the group.
They are going to fly from Spain to Morocco.

The luggage charges for the flight are

- up to 23 kg free
- 12 euros for every kg over 23 kg up to 32 kg.

Any piece of luggage with a weight of over 32 kg is not allowed on the flight.

Abby has 21 kg of luggage.
Belle has 36 kg of luggage.
Zak has 30 kg of luggage.

They must take all of this luggage.

Abby, Belle and Zak can swap items between their luggage.
They need to know the total cost of taking all the luggage.

(b) Find the total cost of taking all the luggage.
State the weight of luggage each person has after the swap. (4)

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

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(Total for Question 3 is 9 marks)



SECTION B : Coffee shops

Answer all questions in this section.

Write your answers in the spaces provided.

- 4** Enid owns some coffee shops.
Her coffee shops are open for 6 days each week.

Enid wants to find the average sales from each of her coffee shops.

The table gives information about sales of coffee from her coffee shop in London for one week.

	Mon	Tue	Wed	Thu	Fri	Sat
Number of cups of coffee sold	225	188	208	241	222	320

- (a) Work out the average number of cups of coffee sold per day for Enid.
Show a check of your working.

(3)

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

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Enid wants to know how the number of sales vary in her coffee shops.
She uses this formula to measure how sales vary.

$$V = \frac{100R}{M}$$

R is the range of the sales

M is the mean of the sales

V is the measure of how sales vary (%)

The table gives information about sales of coffee from her coffee shop in Birmingham for one week.

	Mon	Tue	Wed	Thu	Fri	Sat
Number of cups of coffee sold	190	218	312	280	175	325

The mean number of cups sold in the Birmingham coffee shop is 250

Enid thinks that the value of V for this coffee shop is less than 50%.

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

(4)

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For her Derby coffee shop Enid uses the formula to work out the value of V using figures for

- one week of sales
- one month of sales.

(c) Which value of V is the more reliable?
Give a reason for your answer.

(1)

Use the box below to show clearly your answer.

(Total for Question 4 is 8 marks)



5 Enid wants to work out the profit one of her coffee shops makes from selling tea and coffee.

She knows that

- on a normal day the coffee shop sells 160 cups of tea
- 3 cups of coffee are sold for every 2 cups of tea sold
- the income from a cup of tea is £1.80
- the income from a cup of coffee is £2.20

The profit from the sale of tea and coffee is $\frac{1}{3}$ of the total income from the sales of cups of tea and cups of coffee.

Work out the total profit from the sales of cups of tea and cups of coffee on a normal day for Enid.

(5)

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

(Total for Question 5 is 5 marks)

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6 Enid uses part-time staff in her coffee shops.

In her Taunton coffee shop she needs

- 2 part-time staff working from 7 am to 9 am
- 3 part-time staff working from 12 pm to 4 pm
- 1 part-time staff working from 4 pm to 5 pm.

Here is the list of part-time staff and information about when they can work.

Name	Number of hours available	Notes
Leon	2	Morning only
Naomi	4	Starts at 12 o'clock or later
Pat	3	Starts 2 pm
Roma	3	Starts at 12 o'clock or later
Shola	5	Any time

Only one of Roma or Shola is available to work between 3 pm and 4 pm.

Enid needs to organise a schedule for the part-time staff.

Complete the schedule for Enid.

(3)

Complete the table below.

	7 – 8am	8 – 9am	12 – 1pm	1 – 2pm	2 – 3pm	3 – 4pm	4 – 5pm
Leon							
Naomi							
Pat							
Roma							
Shola							

(Total for Question 6 is 3 marks)



SECTION C : Building

Answer all questions in this section.

Write your answers in the spaces provided.

- 7 Jose is a builder.
He is going to build a new garage.
The garage will be in the shape of a cuboid.
He has this drawing of the garage.

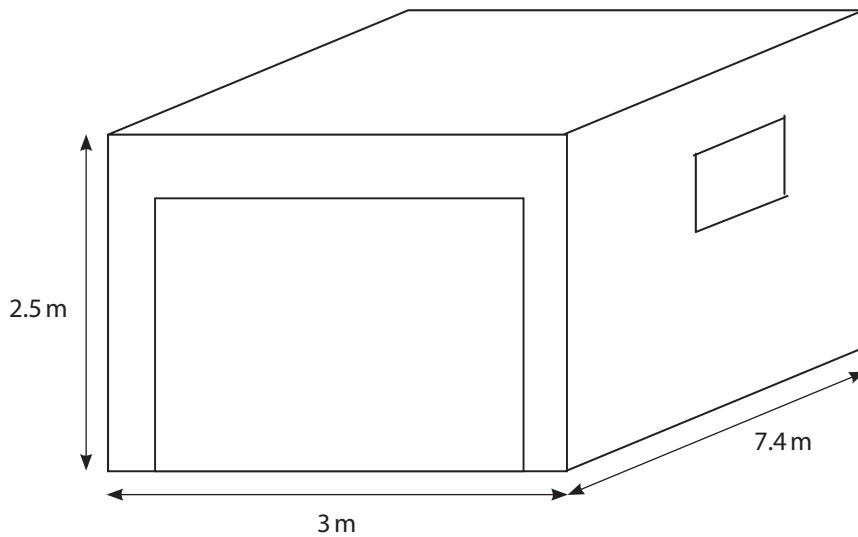


Diagram **not** accurately drawn

Jose decides that

- $\frac{3}{4}$ of the total area of the four sides of the garage will be made of bricks
- he will not use any bricks for the floor or the roof.

Jose knows 1 m^2 of brick wall needs 60 bricks.

He will buy the bricks in packs.
There are 360 bricks in each pack.

Jose thinks that 7 packs of bricks is enough for the garage.

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

(6)

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



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Jose has to make 1.7 tonnes of dry mortar for the garage.

He uses cement, sand and lime in the ratio 1 : 5 : 2 to make the dry mortar.

Jose wants to know how much lime he needs to make 1.7 tonnes of dry mortar.

- (b) How much lime does Jose need?
Give your answer in tonnes correct to 2 decimal places.
Show a check of your working. (3)

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

Use the box below to show your check.



(Total for Question 7 is 9 marks)

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8 Jose has to fit a concrete support in a house.

The support is in the shape of a cuboid, 3 m by 0.1 m by 0.2 m.

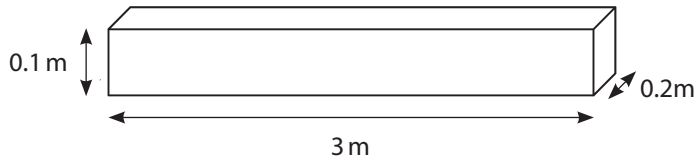


Diagram **not** accurately drawn

Jose wants to work out the weight of the support.

He knows that the weight of 1 m^3 of concrete is 2500 kg.

Jose thinks that the weight of the support will be about 150 kg.

Is Jose correct?

Show why you think this.

(3)

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

(Total for Question 8 is 3 marks)



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9 Jose is asked to make a base for a statue.
The base will be a prism.
The cross section of the prism will be a hexagon.

The hexagon consists of 6 equilateral triangles.
Each side of the hexagon is of length 30 cm.

Jose wants to make a scale drawing of the hexagon.

He has already drawn one side of the hexagon.

(a) Give the scale that Jose has used.

(1)

Write your answer in the box below.

(b) Complete the scale drawing of the hexagon.
Remember to use the line Jose has drawn.

(3)

Use the box opposite to complete the scale drawing.

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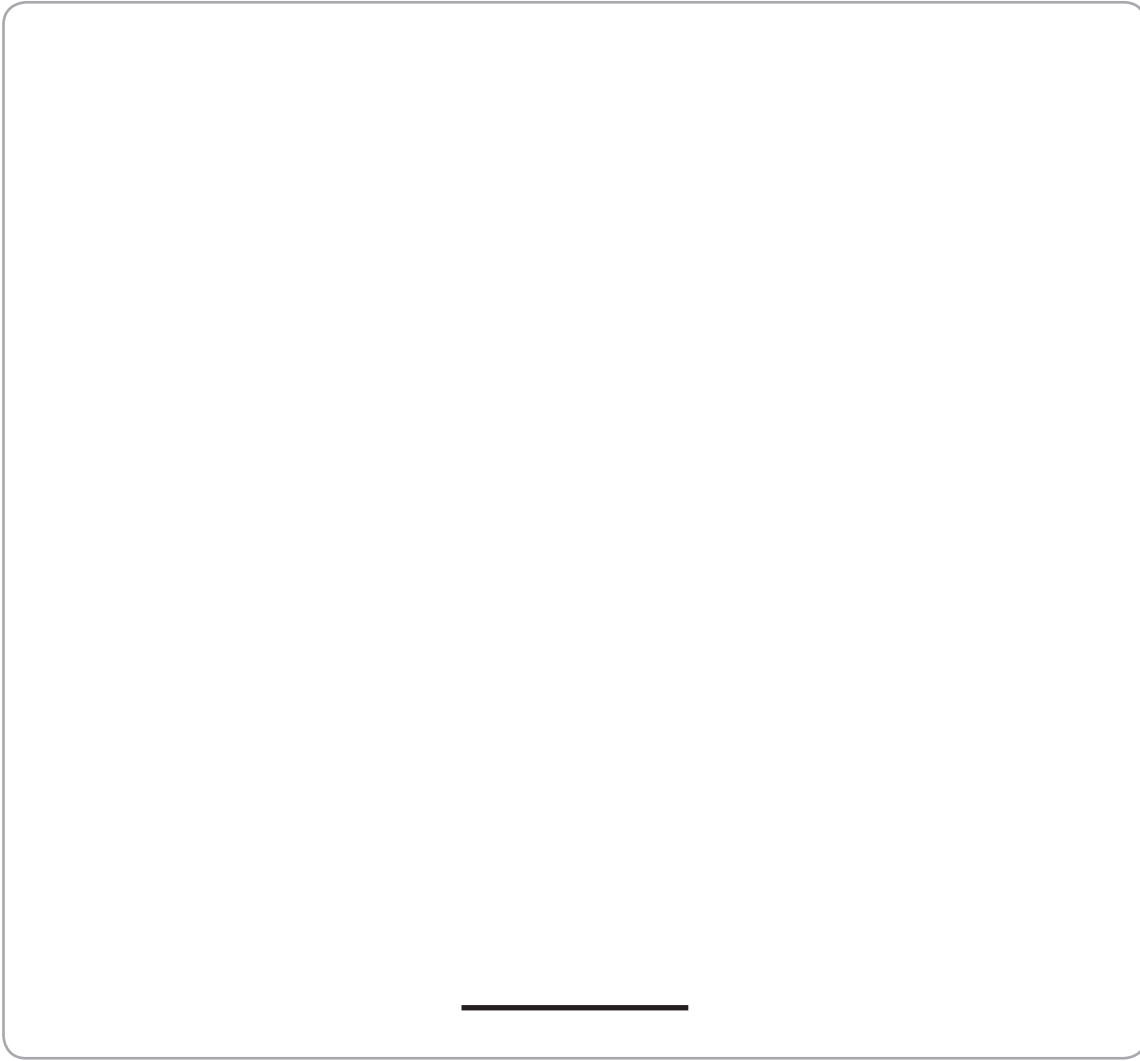
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(Total for Question 9 is 4 marks)

TOTAL FOR PAPER IS 48 MARKS



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