

Write your name here

Surname

Other names

**Pearson Edexcel
Functional Skills**

Centre Number

--	--	--	--	--

Candidate Number

--	--	--	--

Mathematics

Level 2



13 – 17 June 2016

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 as 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 ►

P49938A

©2016 Pearson Education Ltd.

1/1/1



PEARSON

SECTION A: Holiday

Answer all questions in this section.

Write your answers in the spaces provided.

1 Paul and Gill plan a holiday to Barcelona.

They want to fly from Manchester to Barcelona on Friday 14th May.
They want to return on Friday 21st May.

Gill finds this information about flights and hotels on the internet.

Outbound flight			Total cost of flights
Fri 14 May 10:45 am	Manchester to Barcelona	2 h 25 mins	£287 per person
Return flight			
Fri 21 May 2:30 pm	Barcelona to Manchester	2 h 40 mins	

Hold luggage fee – per flight	£17.49 for each piece of luggage
--------------------------------------	----------------------------------

Insurance	£20.75 for two people
------------------	-----------------------

Hotel Torre
£116 per room per night
Special Offer
Book early and get 9% discount on hotel cost

Paul and Gill want to put one piece of luggage in the hold.
They will book one hotel room.
They plan to book early.

Gill thinks they will pay less than £1200 for their flights, luggage, insurance and hotel.

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

(6)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



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



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



Paul wants some euros for their holiday.
He exchanges £153.12 for €200

Gill says to Paul

I want to exchange £250
Using the same exchange rate I should get more than €320

(b) Will Gill get more than €320 for £250 using the same exchange rate?
Show a check of your working.

(4)

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

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



Use the box below to show your check.



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



Paul and Gill book the 10.45 am flight to Barcelona.
The flight time is 2 hours 25 minutes.

On the morning of the flight the take-off time is delayed by 20 minutes.

The pilot says

I can reduce the flight time by 35 minutes because of the wind direction.

The local time in Barcelona is 1 hour ahead of the local time in Manchester.

(c) What is the local time in Barcelona when the plane lands?

(3)

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

(Total for Question 1 is 13 marks)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



2 Paul and Gill hire a car at Barcelona airport.

They know

- their hotel is 14 km from the airport
- the average speed for the journey is 40 km/h.

Paul knows

$$t = \frac{d}{s}$$

t = time in hours

d = distance in km

s = average speed in km/h

He thinks it will only take 20 minutes to drive to the hotel.

Is Paul correct?

Show why you think this.

(3)

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

(Total for Question 2 is 3 marks)



SECTION B: Recycling centre

Answer all questions in this section.

Write your answers in the spaces provided.

- 3** Gary runs a recycling centre for a local charity.
New staff have to take part in 7 hours of training before they can work at the centre.

Gary needs to arrange a training programme for new staff.
The training programme will start on Monday 5th September.

Each training day

- starts at 10 am and must finish by 5 pm
- has sessions in 2 hour blocks which include a 15 minute break
- has a 1 hour break for lunch.

The 15 minute breaks and lunch do not count towards the 7 hours of training.
At the end of the training there will be a 90 minute assessment.

Gary needs to know the least number of days he needs to allocate for the 7 hours of training and the assessment.

Plan a training programme for Gary.
Show the start and finish times for the sessions on your plan.

(4)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



Use the box below for your training programme.

(Total for Question 3 is 4 marks)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



- 4 The charity aims to provide recycled furniture to families in need. In 2015 they supported 4478 families with recycled furniture.

Gary would like to increase the number of families supported in 2016 by $\frac{1}{8}$

How many families would he like to support in 2016?
Show a check of your working.

(4)

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

Use the box below to show your check.



(Total for Question 4 is 4 marks)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



- 5 Gary wants to make a presentation about the number of families who were supported by the charity in the last 2 years.

He has this data about the number of families supported in each quarter.

	Quarter 1	Quarter 2	Quarter 3	Quarter 4
2014	771	880	1161	1108
2015	956	1130	1208	1184

Gary wants to work out the mean and the range for the number of families supported per quarter over the last two years.

He thinks the mean is close to 1000 and the range is close to 450

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

(3)

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



Gary wants to compare the number of families supported in each quarter of 2014 with those supported in each quarter of 2015.

	Quarter 1	Quarter 2	Quarter 3	Quarter 4
2014	771	880	1161	1108
2015	956	1130	1208	1184

Gary wants to show this data in a graph or chart.

(b) Draw a graph or chart for Gary.
Use the graph paper on the next page. (3)

(c) Write a comment to compare the data for 2014 with the data for 2015 (2)

Write your comment in the box below.

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

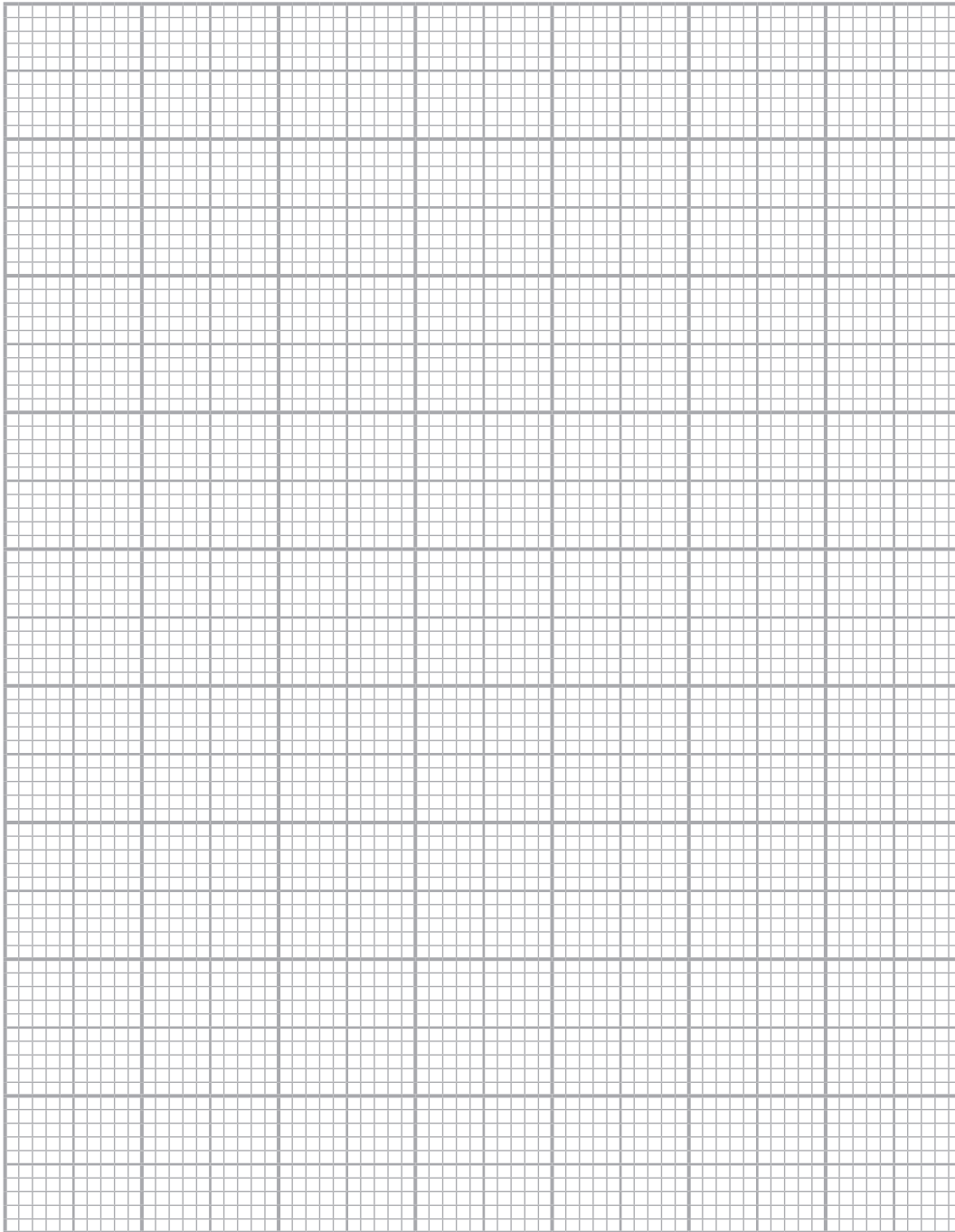
DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



You can draw a graph or chart on the grid below.



(Total for Question 5 is 8 marks)



P 4 9 9 3 8 A 0 1 3 2 0

SECTION C: The wedding

Answer all questions in this section.

Write your answers in the spaces provided.

- 6** Hayley and Tristan are getting married.
Adnan offers them the use of his garden for their wedding.

He wants to put lighting around part of the garden.
The perimeter of this part of the garden is 55 m.

The lighting Adnan wants to order is sold in lengths of 25 feet and
in lengths of 40 feet.

He uses the conversion $1 \text{ foot} = 0.3 \text{ metres}$.

What combination of lengths of lighting should Adnan order to have
enough to go round the garden?
Evaluate the effectiveness of your answer. (4)

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

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



Use the box below to write your evaluation.

(Total for Question 6 is 4 marks)



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

7 Hayley wants to make her own three tier wedding cake.
She finds this list of ingredients for a vanilla cake.

250 g butter
250 g sugar
1 vanilla pod
5 eggs
85 g plain flour
100 g Greek yoghurt
250 g self-raising flour
3 tsp milk



The bottom tier of the cake needs 3 times the amount of each ingredient shown in this list.

The middle tier and the top tier each need 2 times the amount of each ingredient.

Hayley has half a kilogram of plain flour.

- (a) Does Hayley have enough plain flour to make all 3 tiers of her wedding cake?
Show why you think this. (3)

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

Empty box for showing the answer.

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



Hayley wants to cover the bottom tier of the cake with white icing.

The bottom tier is cylindrical with a radius of 15 cm and a height of 11 cm.

The icing is sold in packs.

Each pack of icing can cover an area of up to 2000 cm².

Hayley finds this formula for the total area of icing needed to cover the bottom tier.

$$A = \pi r^2 + 2\pi r h$$

A = total area (cm²)

π = 3.14

r = radius (cm)

h = height (cm)

(b) Will one pack of icing be enough to cover the bottom tier?
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 Adnan's garden is rectangular 35 m by 26 m.

He will arrange for a bandstand and a marquee to be put in the garden.
Adnan makes a scale drawing of the garden.

The bandstand is circular with a diameter of 7 m.

The marquee

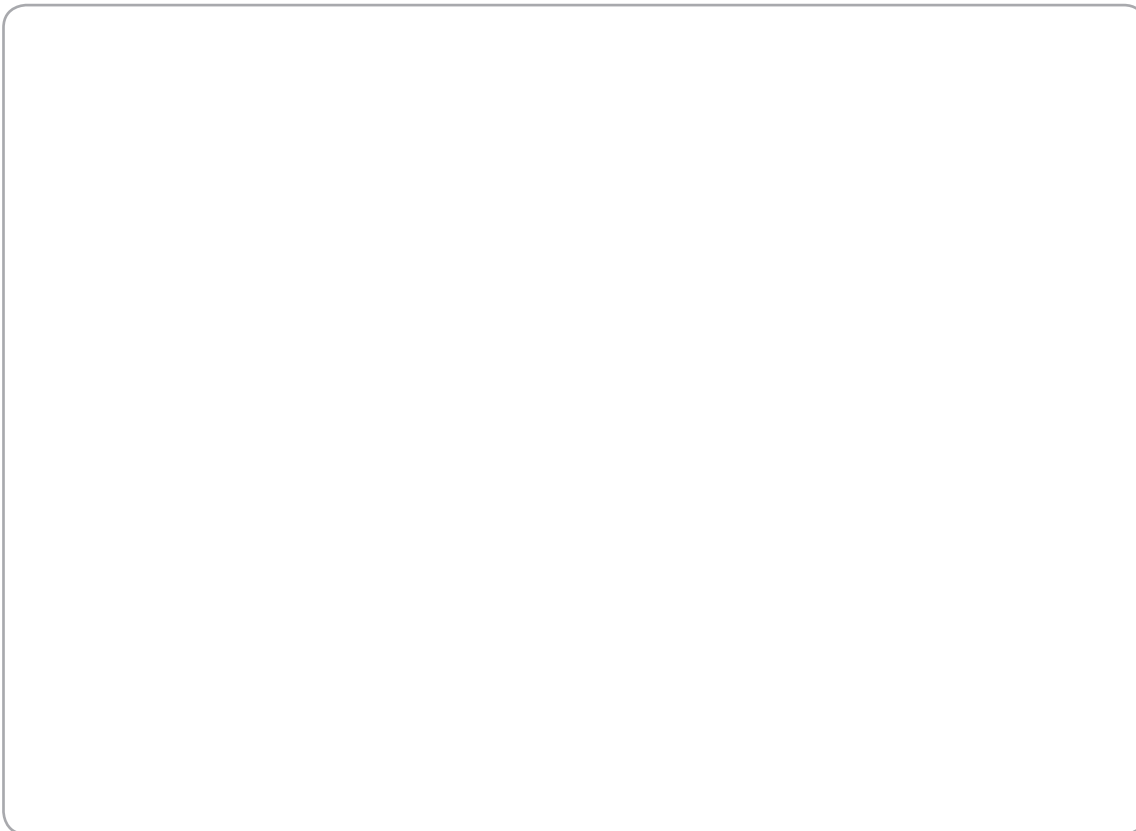
- is rectangular 15 m by 12 m
- needs to be at least 2 m from the bandstand
- must have one of its longest lengths next to the wall.

Adnan draws the position of the bandstand on the scale drawing.

Use the same scale as Adnan to draw the marquee on the scale drawing.
Show your working.

(6)

Show the marquee on the scale drawing on the opposite page.
Use the box below to show your working.



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



DO NOT WRITE IN THIS AREA

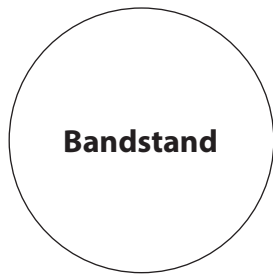
DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



(Total for Question 8 is 6 marks)

TOTAL FOR PAPER IS 48 MARKS



P 4 9 9 3 8 A 0 1 9 2 0

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

BLANK PAGE

