

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



12 – 16 October 2015

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 ►

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PEARSON

SECTION A: Gardening

Answer all questions in this section.

Write your answers in the spaces provided.

1 Andy is a keen gardener.

He wants to put a shed in a corner of his garden.

The shed is rectangular 2.5 m by 1.75 m.

He also wants a rectangular vegetable patch with an area of 6m^2 .

Andy draws a plan of his garden on a grid.

Draw and label the shed and the vegetable patch on the grid.
Remember to use the scale in the key.

(4)

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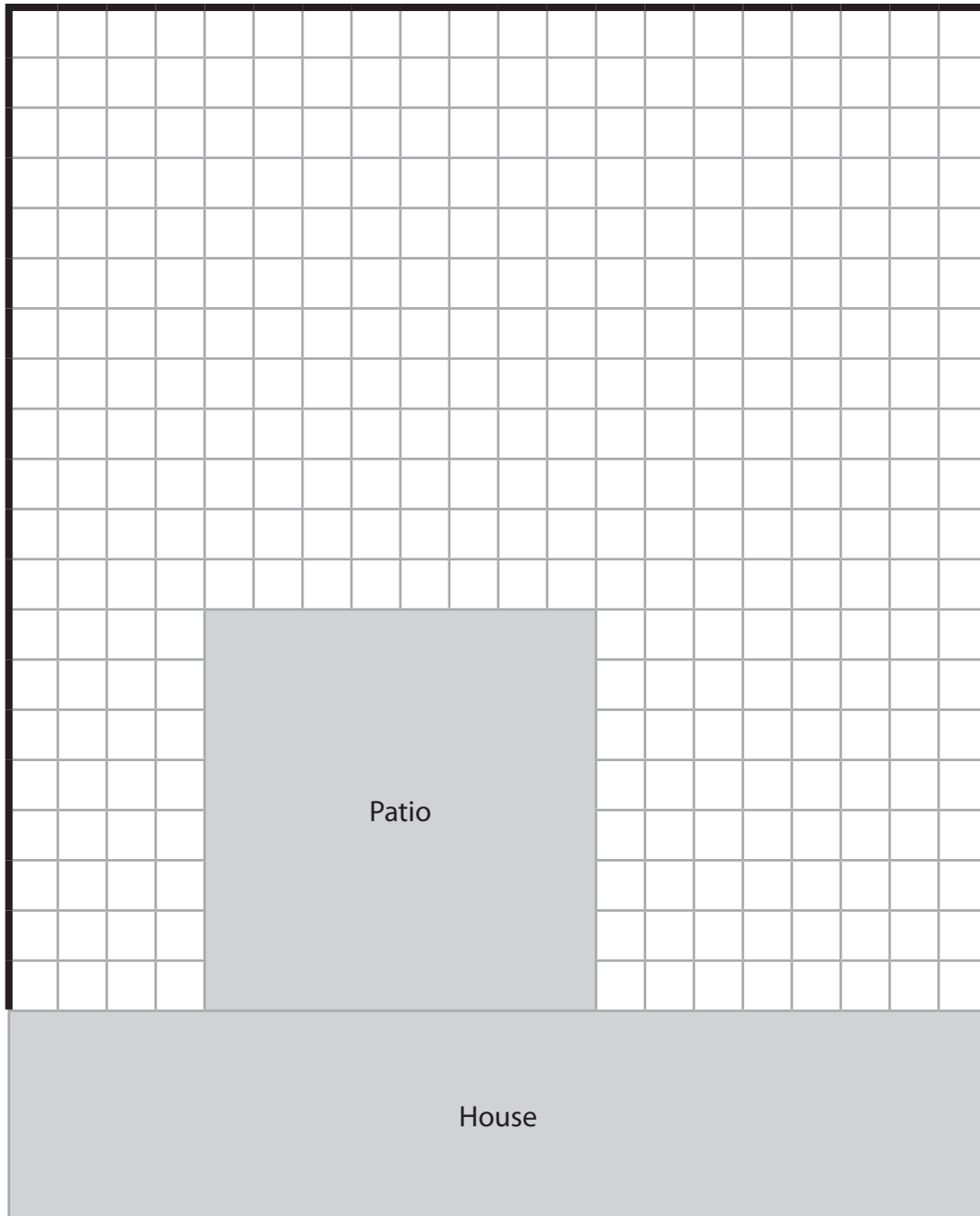
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Key: 1 square on the plan is 25 cm by 25 cm in the garden

— Fence

(Total for Question 1 is 4 marks)



2 Andy is going to lay turf in his father's garden.
He needs to cover an area 6000 mm by 4500 mm.

Each piece of turf is 610 mm wide and 1640 mm long.
Andy can cut and join the pieces of turf.

Each piece of turf costs £3.35
Andy buys the turf in packs of 10 pieces.

Andy thinks that £110 will be enough to buy all the turf he needs.

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

(6)

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

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Large empty rectangular area for writing.



Andy needs to prepare fertiliser for the new turf.

He has this information.

Fertiliser for new turf

Apply a mix of nitrogen, phosphate and potash
in the ratio 3:1:1

Andy needs 7 lb of fertiliser.

He has 4.5 lb of nitrogen.

- (b) Has Andy got enough nitrogen to make 7 lb of fertiliser?
Show how you checked your answer.

(4)

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

Show how you checked your answer in the box below.



(Total for Question 2 is 10 marks)

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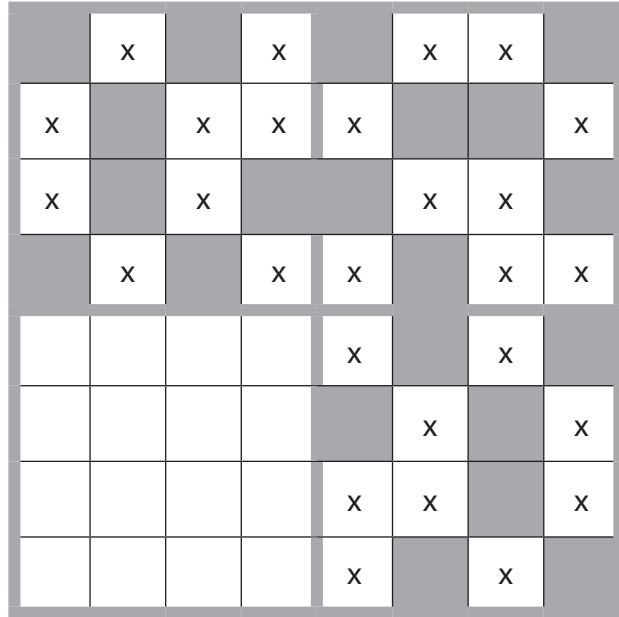
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- 3 Andy wants to use paving slabs for his patio in a symmetrical pattern. He starts the pattern like this.



Andy has to put these slabs in the pattern.

7 coloured slabs



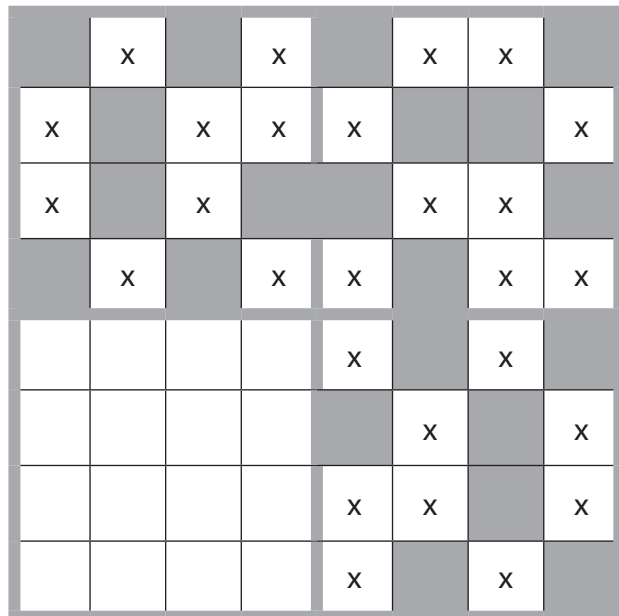
9 patterned slabs



Finish the pattern so that it has rotational symmetry.

(2)

Draw your pattern on the grid below.



(Total for Question 3 is 2 marks)



SECTION B: Holiday

Answer all questions in this section.

Write your answers in the spaces provided.

- 4 Mark is planning a family holiday in Cancun.

He compares two websites for the best flight and hotel package.

flyaway.net

Flight and hotel package
Total price £4719

Special offer
15% off your total price

sunnyhols.com

Flight and hotel package
Flight £2299
Hotel £2099

Early bird offer
 $\frac{1}{5}$ off hotel price

- (a) Which package is cheaper?

(5)

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Mark wants to buy travel insurance for his family.
He sees this offer.

Travel insurance for 1 week
£11.69 per person

Mark, his wife and their 2 children are going to Cancun for 2 weeks.

He thinks the total cost of the travel insurance for himself and his family will be less than £90

(b) Is Mark correct?
Show why you think this.
Show how you check your answer. (3)

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

Show how you checked your answer in the box below.



(Total for Question 4 is 8 marks)

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- 5 Mark, his wife and their 2 children arrive at the airport.
They take their baggage to the check-in desk.
Their baggage weighs 97.4 kg in total.

Each of the 4 of them has an allowance of 23 kg of check-in baggage.
They have to pay for the baggage over their allowance.

Mark decides to pay with loyalty points.
He has to use 1800 points for each whole kg over the allowance.
Mark has 10 000 points.

Does Mark have enough points for the extra baggage?

(4)

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

(Total for Question 5 is 4 marks)



6 On the flight the pilot says

We are flying at 30 000 feet.
Our speed is 500 miles per hour.
Our total flight time will be 10 hours and 20 minutes.

Mark knows the distance from London to Cancun is 4944 miles.
He asks his daughter to check the information given by the pilot.
She knows this formula for speed.

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

s = speed (miles per hour)

d = distance (miles)

t = time (hours)

Evaluate the information given by the pilot.
Show calculations to support your answer.

(4)

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



(Total for Question 6 is 4 marks)



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SECTION C: Designing apps

Answer all questions in this section.

Write your answers in the spaces provided.

- 7 Zahra designs mobile phone apps.
She is going to a business meeting.
She needs to suggest new software to build apps.

The new software needs at least 1024 Mb RAM.
The model should be server based and it should have both mobile and online user modes.

Zahra finds this information about some software.

software	price	RAM	model	user mode
A	£199.49	1024Mb	web based	mobile online
B	£265.45	1024Mb	server based web based	mobile online
C	£275.30	1024Mb	server based web based	mobile online
D	£189.95	512 Mb	server based	online

Zahra wants the cheapest software.
She has a store credit of £283.05 to pay for the software.

- (a) Which software should Zahra buy?
How much will Zahra have left from the £283.05?
Show how you check your working.

(4)

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

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Show your check in the box below.



The meeting starts at 1:15 pm.
It takes Zahra 55 minutes to get to the meeting from her office.
She needs at least three quarters of an hour to set up before the meeting begins.

Zahra leaves her office at 11:30 am.

(b) Will Zahra be ready for the meeting in time?

(3)

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

(Total for Question 7 is 7 marks)



- 8 Zahra wants to know what sort of app to design next. She conducts a survey of app users.

Zahra asks the users to say if they prefer game apps or shopping apps. She asks their age and the number of apps they download each month.

Here is the information Zahra collects.

App they prefer	Age group	Number of apps downloaded
Shopping	Under 25	3
Game	Under 25	12
Game	25–50	6
Game	Under 25	8
Game	Under 25	18
Shopping	25–50	23
Shopping	25–50	3
Game	Under 25	4
Game	25–50	17
Shopping	25–50	8
Game	25–50	9
Game	Under 25	0
Shopping	Under 25	2
Shopping	25–50	11
Game	Under 25	14
Shopping	Over 50	9
Shopping	25–50	3
Game	25–50	2
Game	Over 50	8
Game	Over 50	2

Zahra wants to sort the information and put it in a summary table. She decides to put the number of apps into two groups –

low (fewer than 10) and high (10 or more).

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The table should show

- the type of app
- the age group
- whether they download a low or a high number of apps.

(a) Sort the information and put it in a table for Zahra.
Remember to check your answer.

(5)

Write your answer in the box below.

(b) Explain how your table can help Zahra decide what sort of app
to design next.

(1)



Zahra wants the price of her next app to be less than the mean price of her most popular app over the last 4 years.

The table shows the price of her most popular app for the last 4 years.

Year	2011	2012	2013	2014
Price (£)	5.99	4.79	3.59	2.99

Zahra thinks she should price her next app at £3.99

(c) Is Zahra correct?
Show why you think this.

(3)

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

(Total for Question 8 is 9 marks)

TOTAL FOR PAPER IS 48 MARKS

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