Write your name here

Surname	Other names

Pearson Edexcel Functional Skills

Centre Number | | | | | |

Candidate Number | | | | |

Mathematics

Level 2

11 – 15 June 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

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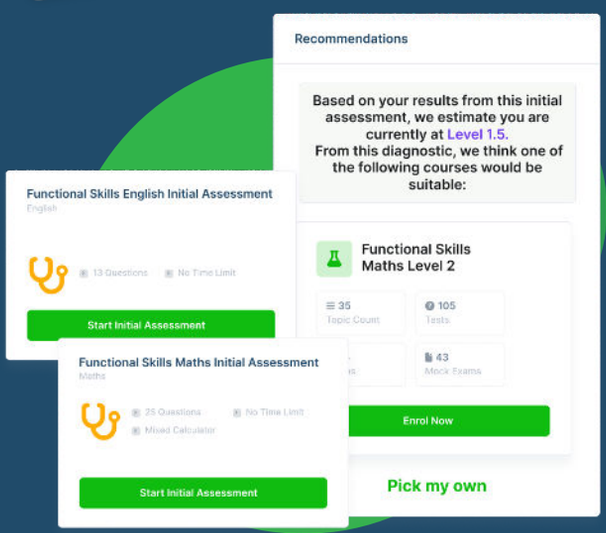
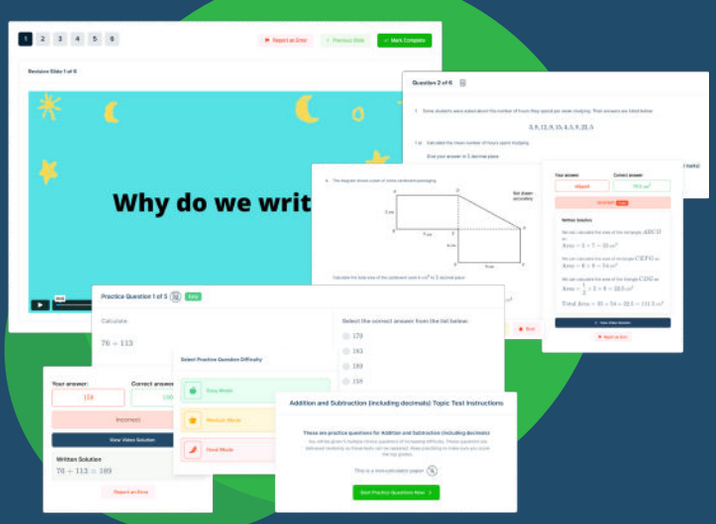
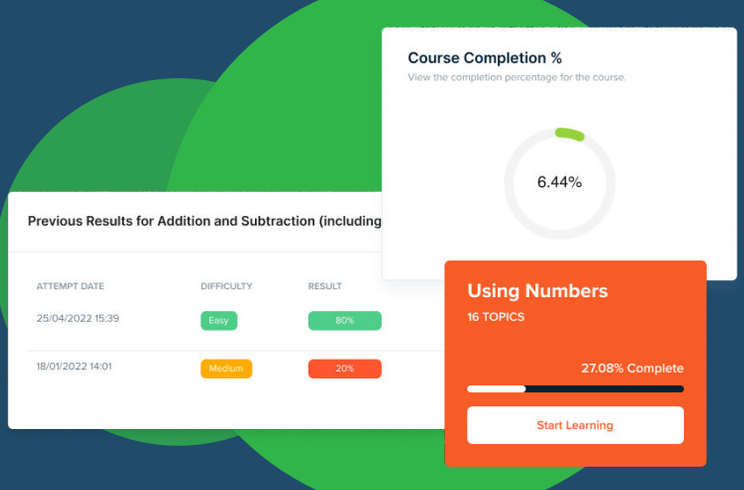
FUNCTIONAL SKILLS ONLINE COURSES



- Your answers are analysed to determine your Current Level
- Suggested courses for you to enrol on based on your calculated level
- Always know the level you are currently working at
- Determine when you are ready to sit your exam

- Explainer videos on every topic
- Quick-fire style mutiple choice questions
- Test your knowledge with exam-style questions
- Written solutions for all questions





- See your progress through as you progress through each topic area
- Get your average scores for practice questions, topic tests and mock exams
- View all practice question, topic test and mock exam attempts over time
- View historical attempts to analyse your progress over time

Or visit
passfunctionalskills.co.uk

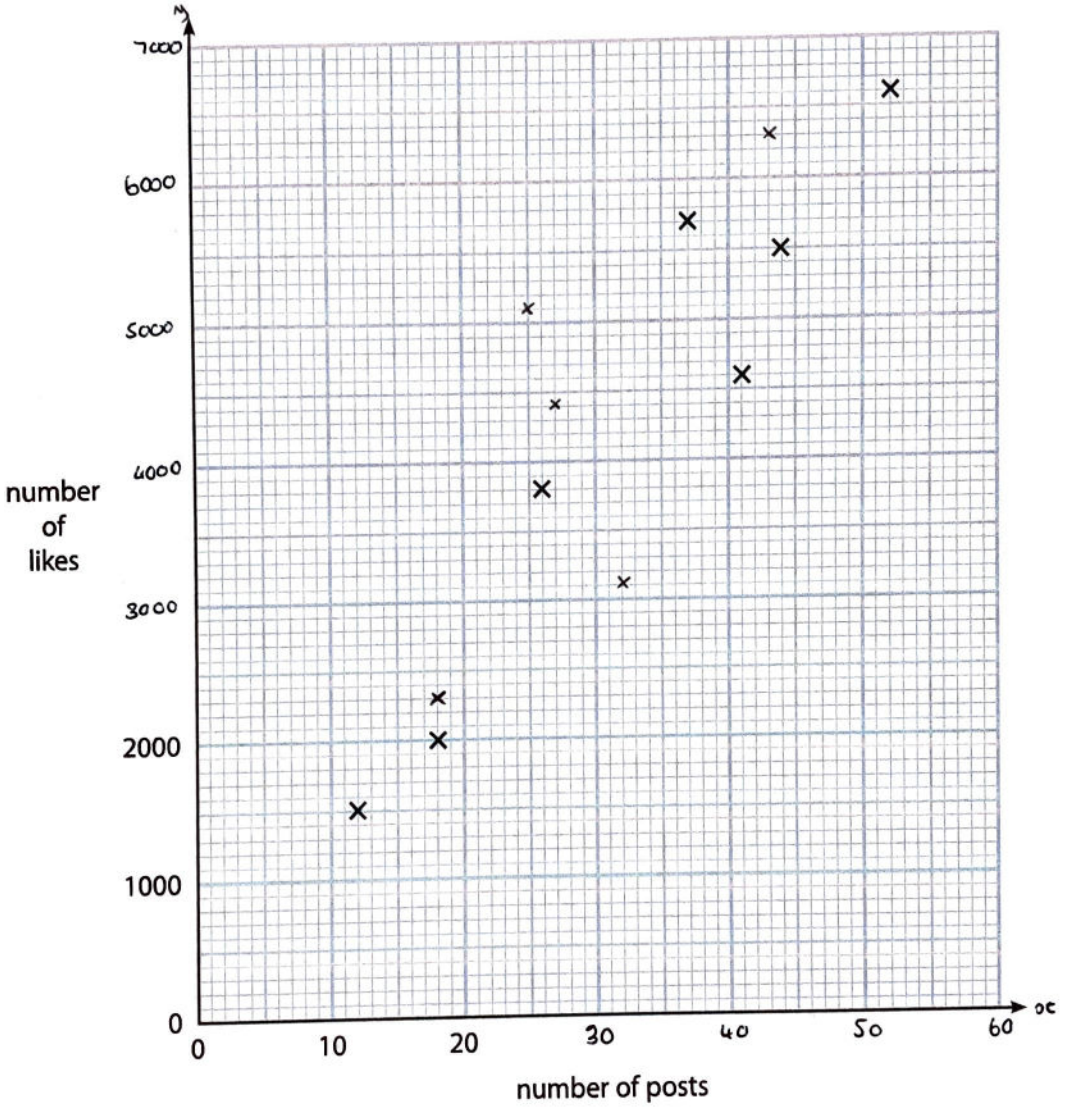
SECTION A: Advertising

Answer all questions in this section.

Write your answers in the spaces provided.

1 Laypin monitors social media for a company.

She begins to draw a scatter graph for the number of posts and the number of likes for the company in the last seven weeks of 2017



The table shows some rounded information for the first five weeks of 2018

number of posts	18	43	32	25	27
number of likes	2300	6300	3100	5100	4400

Laypin wants to add this information to the scatter graph.

(a) Complete the scatter graph for Laypin.
Use the grid on the page opposite. (3)

Laypin needs to write a comment about any correlation shown by the scatter graph.

(b) Write a comment for Laypin. (1)

Use the box below to write your comment.

There is a positive correlation.

The table below shows the exact number of likes received in the first 5 weeks of 2018

week	1	2	3	4	5
number of likes	2341	6310	3129	5128	4357

Laypin thinks the mean weekly number of likes in these 5 weeks is more than 4000

(c) Is the mean weekly number of likes in these 5 weeks more than 4000? Show a check of your working. (3)

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

$2341 + 6310 + 3129 + 5128 + 4357$

$= 21265.$

$\frac{21265}{5} = 4253$ per week.

Yes, it is more than 4000.

Write your check in the box below.

☑ $4253 \times 5 = 21265 = 2341 + 6310 + 3129 + 5128 + 4357.$

(Total for Question 1 is 7 marks)

2 Laypin has this information about the number of sales the company made last month.

	Type of customer	
Type of product	first time	returning
new	1634	5618
existing	435	2394
clearance	731	3012

(a) What percentage of the products sold last month to first time customers were new products?
Give your answer correct to 1 decimal place. **(3)**

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

First time customers: $1634 + 435 + 731 = 2800$ total.

$$\frac{1634}{2800} \times 100 = 58.357\%.$$

$$\rightarrow 58.4\%.$$

The company stocks 240 different products.

It stocks the products in the ratio

new	:	existing	:	clearance
3	:	2	:	1

Laypin thinks it stocks 117 new products.

(b) Is Laypin correct?
Show why you think this. (3)

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

$3+2+1 = 6$ parts.

$\frac{3}{6} \times 240 = 120$ new products.

No, Laypin stocks 120 new products.

(Total for Question 2 is 6 marks)

3 The company also advertises its products in France.

One French website charges €195 per advert.
The company buys 5 of these adverts.

The exchange rate is £1 = 1.1025 euros.

What would be the total cost of the 5 adverts in pounds?

(3)

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

€195 × 5 = €975.

$\frac{€975}{1.1025}$ = £884.35

(Total for Question 3 is 3 marks)

SECTION B: Safari Park

Answer all questions in this section.

Write your answers in the spaces provided.

4 The Lawson family want to go to the safari park.
They see this online offer.

Safari Park

Admission Prices

	peak	off peak
adults	£17.80	£14.50
children (aged 3 and over)	£12.50	£10.25
children (under 3)	FREE	FREE
senior citizen (65 and over)	£13.50	£10.25
family (2 adults and 2 children)	£56.00	£44.00

peak
Saturday and Sunday

off peak
Monday to Friday

Buy online and save 18% off the normal ticket price

The Lawson family are 2 adults, 2 children over the age of 3 and 1 senior citizen.
They will visit the safari park on Sunday.

Mrs Lawson uses the online offer to pay for the tickets for all the family.
She wants to pay as little as possible.

How much will Mrs Lawson pay in total for all the tickets?

(5)

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

£56 (family ticket) + £13.50 (senior) = £69.50.

1 − 0.18 = 0.82.

0.82 × £69.50 = £56.99

(Total for Question 4 is 5 marks)

5 The Lawson family need to plan their day at the safari park.
They will arrive at 10.30 am and leave no later than 3.30 pm.

They want to do the following activities

safari drive	1.5 hours
play park	20 mins
bird display	$\frac{3}{4}$ of an hour, starts at 11.30 am or 1.30 pm or 3 pm
wild trail	40 mins
lunch	$\frac{1}{2}$ an hour between 12 noon and 1 pm.

They need to allow at least 10 minutes between each of these activities.

Design a plan of the day for the Lawson family.
Remember to show the start and end times for each activity. (4)

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

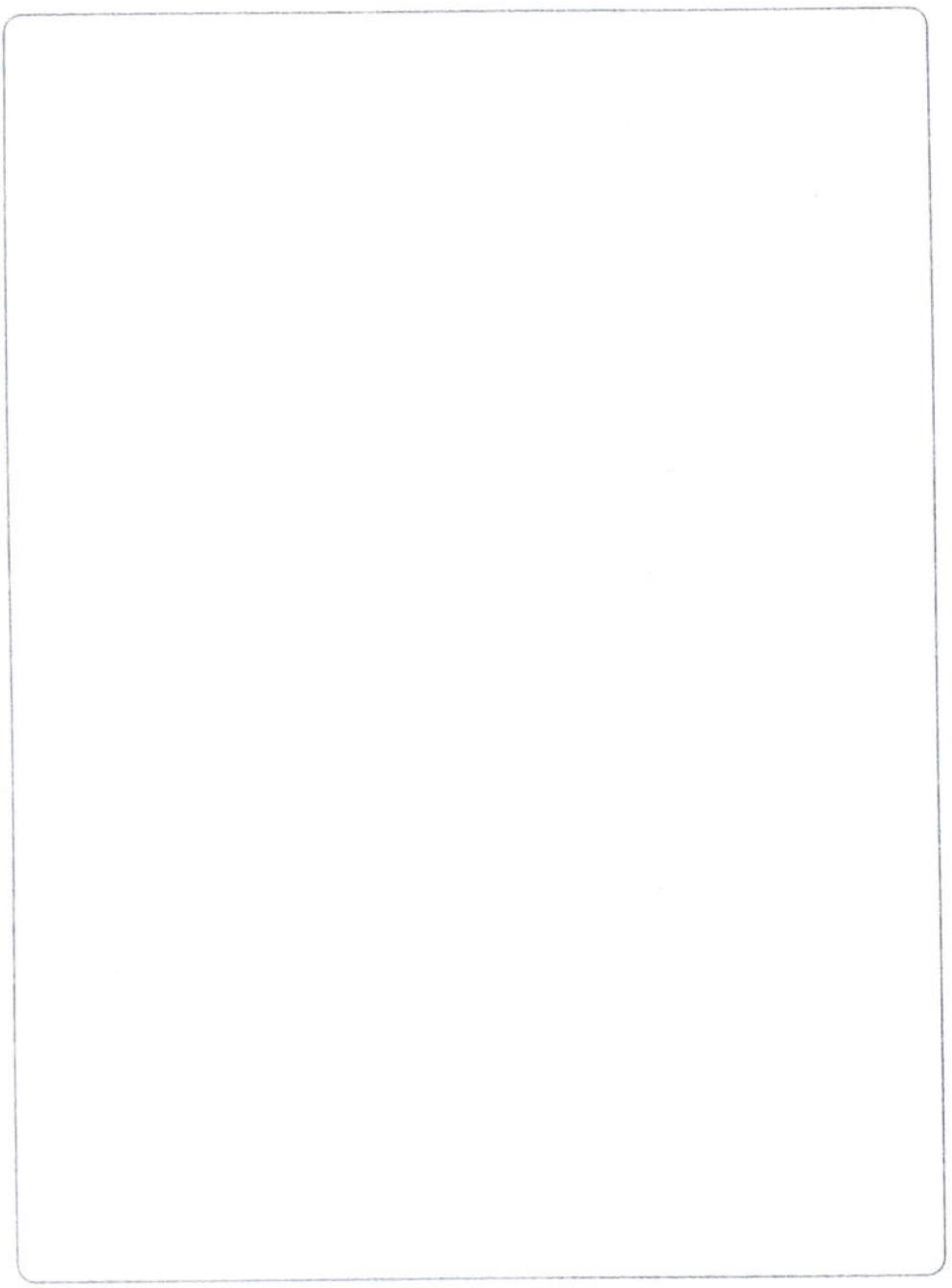
Safari Drive 10:30am – 12pm.

Lunch 12:10pm – 12:40pm.

Play Park 12:50pm – 1:10pm

Bird Display 1:30pm → 2:15pm

Wild trail 2:25pm → 3:05pm



(Total for Question 5 is 4 marks)

6 At the safari park Mrs Lawson sees this offer.

Special Offer

$\frac{1}{3}$ off the cost of all photographs today

The normal price of a photograph is £12.60

How much is the cost of a photograph with this special offer?
Show a check of your answer. **(3)**

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

$1 - \frac{1}{3} = \frac{2}{3}$

$\frac{2}{3} \times £12.60 = £8.40$

Use the box below to show your check.

☑ $\frac{£8.40}{\frac{2}{3}} = £12.60$.

(Total for Question 6 is 3 marks)

7 The Lawson family live 65 miles from the safari park.
They will leave the park at 3.30 pm.

The average speed of the journey home will be 50 mph.
They need to arrive home by 4.45 pm.

Will the Lawson family arrive home by 4.45 pm?

(4)

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

$\frac{65\text{ mi}}{50\text{ mph}} = 1.3\text{ hrs} = 1\text{hr}, 18\text{mins}.$

3:30pm + 1hr 18mins = 4:48pm.

No, they will be 3 minutes late.

(Total for Question 7 is 4 marks)

SECTION C: The park

Answer all questions in this section.

Write your answers in the spaces provided.

8 Josh is redesigning the local park.
He wants to include 3 components, a play area, a water feature and a garden.

Josh asks local residents to choose one option from each component

- play area (slide or climbing wall)
- water feature (lake or fountain)
- garden (roses or trees).

Josh also asks how many times each of these residents visit the park each month

- 0 to 1
- 2 to 5
- 6 or more.

He needs to record the answers on a data collection sheet.

Design a data collection sheet for Josh. (3)

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

	Play Area		Water Feature		Garden	
	Slide	Climbing Wall	Lake	Fountain	Roses	Trees
0 to 1.						
2 to 5						
6 +.						

(Total for Question 8 is 3 marks)

9 The residents decide to have a lake in the park.
There will be a grass path around the lake.

The lake will be circular with a diameter of 95 m.
The grass path will be 4 m wide.

Josh has this sketch of the lake and the path.

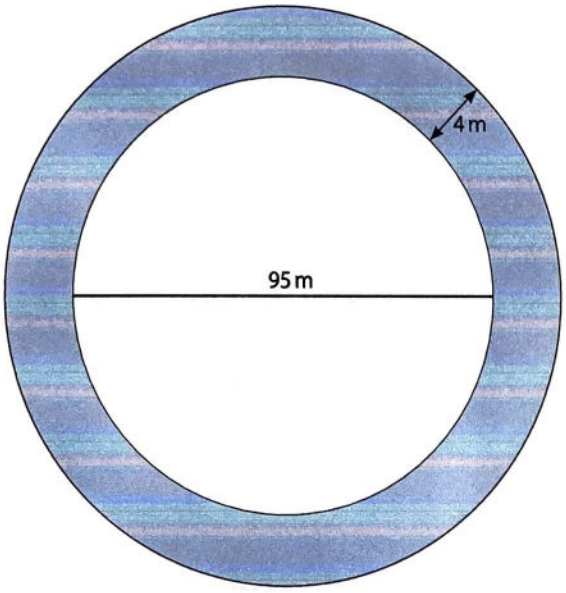


Diagram **not** accurately drawn.

$A = \pi r^2$

A = area of a circle
r = radius of a circle
use $\pi = 3.14$

Josh needs to order enough grass seed for the path around the lake.

Work out the area of the path for Josh.

(5)

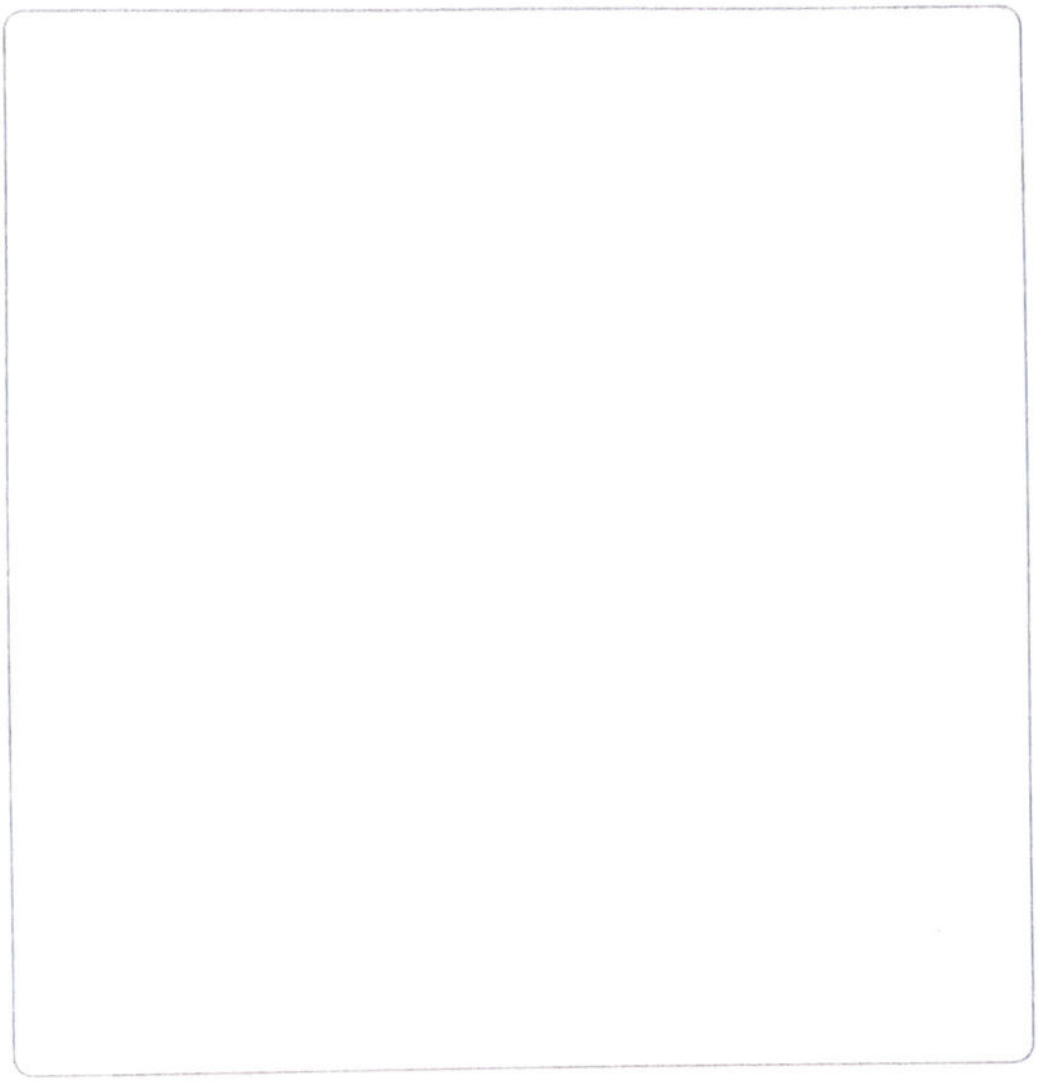
Use the box below to show clearly how you get your answer.

Radius of lake + grass: $\frac{95}{2} + 4 = 51.5\text{m}$.
Radius of lake: $\frac{95}{2} = 47.5\text{m}$.
Area = πr^2.

$3.14 \times 51.5^2 = 8328.065\text{m}^2$ (L+G).

$3.14 \times 47.5^2 = 7084.625\text{m}^2$ (L).

$8328.065 - 7084.625 = 1243.44\text{m}^2$ (G).



(Total for Question 9 is 5 marks)

10 Josh creates a picnic area in the park.

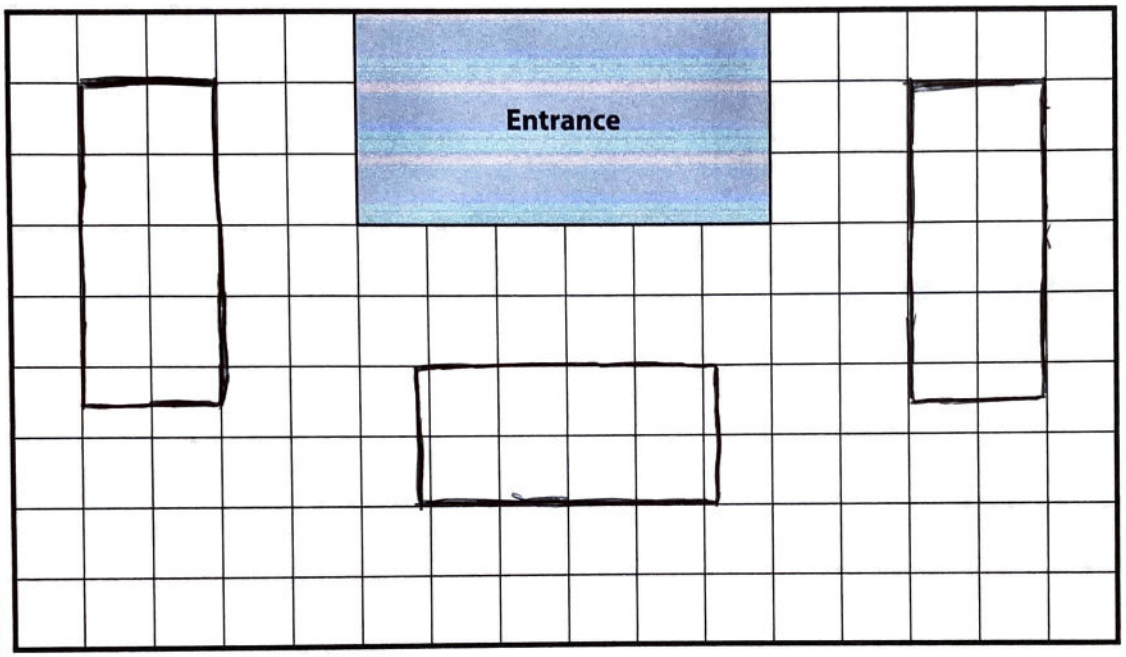
He wants to put 3 identical tables in the picnic area.

Each table needs a rectangular space 1.8 m by 0.8 m.

The tables must be at least

- 0.8 m away from the entrance space
- 0.4 m away from the hedge
- 1 m away from each other.

Josh has this scale diagram of the picnic area.



Key 1 square on the grid is 40 cm by 40 cm on the picnic area

——— hedge

(a) On the grid above draw the spaces for the tables for Josh. (3)

Josh needs to build a concrete base for each of the 3 tables.

Each concrete base must be a cuboid 0.8 m by 1.8 m by 12 cm.

Josh thinks 0.5 m^3 of concrete will be enough to build all 3 bases.

(b) Is Josh correct?
Show why you think this. (4)

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

$0.8 \times 0.12 \times 1.8 \times 3 = 0.5184 m^3$

No, Josh is incorrect.

Josh wants to double the depth of the concrete bases.
He thinks he needs to double the total amount of concrete.

(c) Is Josh correct?
Explain why you think this. (1)

Use the box below to write your answer.

Yes, only one length has doubled.

(Total for Question 10 is 8 marks)

TOTAL FOR PAPER IS 48 MARKS

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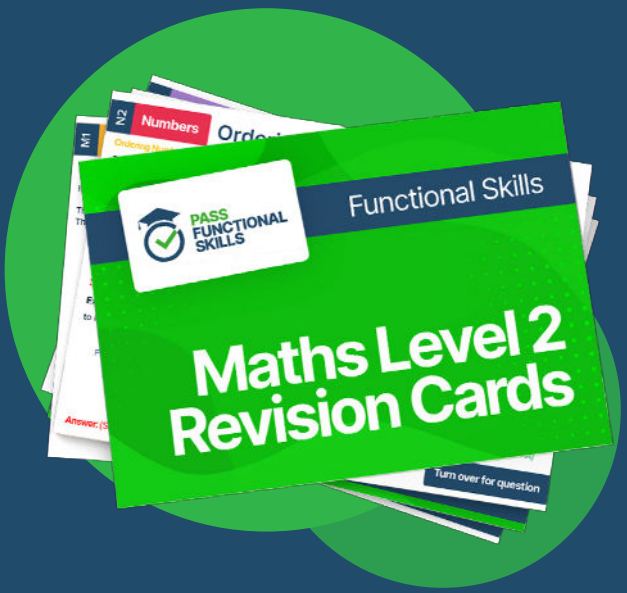

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