

Write your name here

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**Pearson Edexcel
Functional Skills**

Centre Number

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Mathematics

Level 1



8 – 12 January 2018

Time: 1 hour 30 minutes

Paper Reference

FSM01/01**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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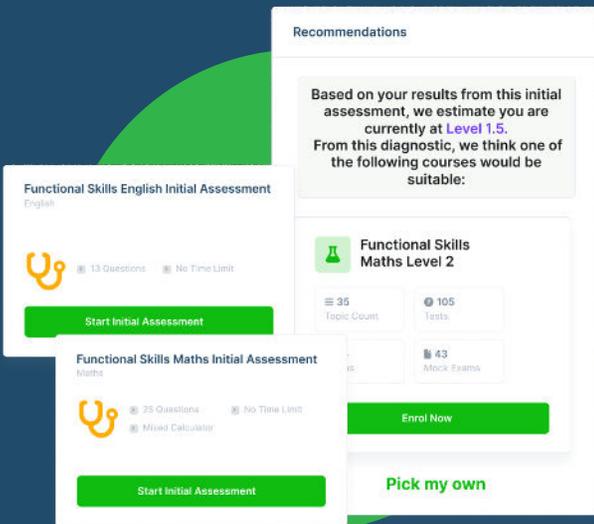
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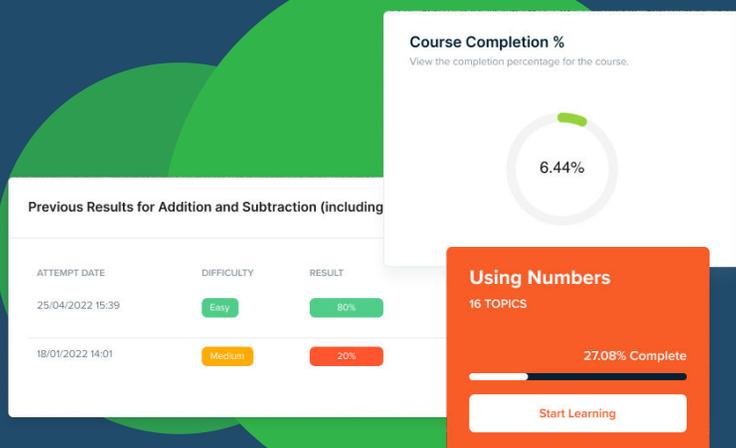
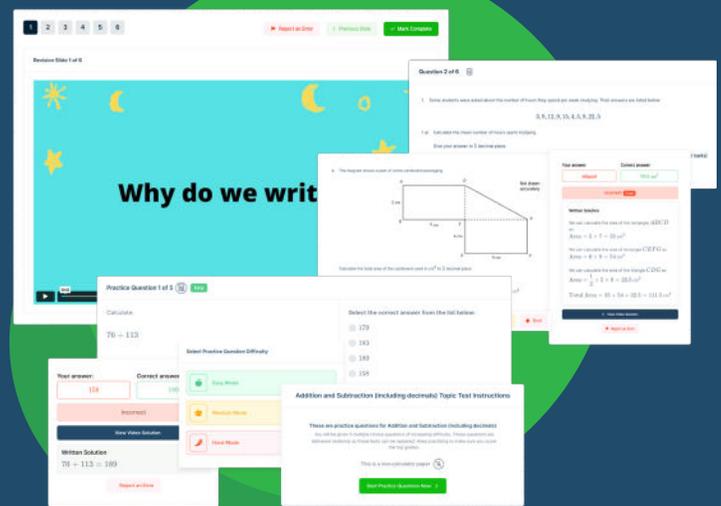


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SECTION A: Rowing**Answer all questions in this section.****Write your answers in the spaces provided.**

- 1 Luke is a member of a rowing club.
The rowing club organises a charity event using indoor rowing machines.

The table shows the time it took Luke to row 10 km in 6 training sessions.

Time taken (minutes)	<u>54</u>	<u>52</u>	<u>47</u>	<u>51</u>	<u>45</u>	<u>42</u>
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Luke can enter the rowing event if his mean time to row 10 km is less than 50 minutes.

- (a) Is his mean time to row 10 km less than 50 minutes?
Show a check of your working.

(4)

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

$$\frac{54 + 52 + 47 + 51 + 45 + 42}{6} = \frac{291}{6} = 48.5 < 50$$

Yes .

Use the box below to show your check.

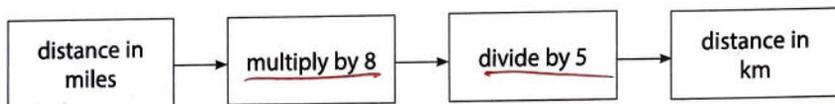


$$48.5 \times 6 = 291$$

Teams take part in the rowing event.
Each team must row a total distance of 67 miles.

The indoor rowing machines show the distance rowed in kilometres (km).

Luke uses this rule to change miles into km.



Luke thinks 67 miles is the same distance as 110 km.

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

(3)

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

$$67 \times 8 = 536$$

$$536 \div 5 = 107.2 \text{ km} \neq 110 \text{ km}$$

No.

(Total for Question 1 is 7 marks)

- 2 Luke wants to make some snacks for the rowing event.
He has these lists of ingredients.

Energy bars
(makes 8 bars)

1 tbsp oil
3 bananas
1 tbsp honey
1 tbsp peanut butter
280g oats
2 tbsp mixed seeds

Smoothie
(each)

1 banana
300ml skimmed milk
30g oats
100g plain yoghurt
140g mixed berries

Luke has 2kg of oats.
He will make 4 smoothies.

Luke also wants to make 50 energy bars to sell at the event.

Does Luke have enough oats to make 4 smoothies and 50 energy bars?

(5)

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

$$280 \div 8 = 35 \text{ g per bar.}$$

$$35 \times 50 = 1750 \text{ g}$$

$$30 \times 4 = 120 \text{ g}$$

$$1750 + 120 = 1870 \text{ g}$$

$$= 1.87 \text{ kg} < 2 \text{ kg.}$$

Luke ~~does~~ have enough.

- 3 The table shows the amount of money collected by each team for the rowing event.

Team	Amount collected
A	<u>£2347</u>
B	<u>£3862</u>
C	<u>£3581</u>
D	<u>£1954</u>

Luke was in team A.
He says

Team A collected $\frac{1}{5}$ of the total amount.

(a) Is $\frac{1}{5}$ of the total amount of money collected £2347?

(3)

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

$$2347 + 3862 + 3581 + 1954 = 11744.$$

$$\frac{1}{5} \times 11744 = \pounds 2348.80 \neq \pounds 2347.$$

No.

SECTION B: Keeping rabbits

Answer all questions in this section.

Write your answers in the spaces provided.

- 4 Ben wants to keep rabbits in his garden.
The rabbits will live in a rabbit run and hutch.

Ben wants to have 2 rabbits.

He knows that each rabbit needs a floor space of 4500 cm^2

Ben has a hutch with a floor space of 9500 cm^2

- (a) Is this floor space big enough for 2 rabbits?
Show why you think this.

(2)

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

$$4500 \times 2 = 9000 < 9500 .$$

Yes .

Ben has a lawn in his garden.
The lawn is in the shape of a rectangle 6m by 5m.

(b) What is the area of the lawn?

(2)

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

$$6 \times 5 = 30 \text{ m}^2$$

(Total for Question 4 is 4 marks)

5 Ben wants to put the rabbit run and hutch on his lawn.

The space for the rabbit run must

- be square 350 cm by 350 cm
- have at least 50 cm space to walk around it.

The space for the rabbit hutch must be

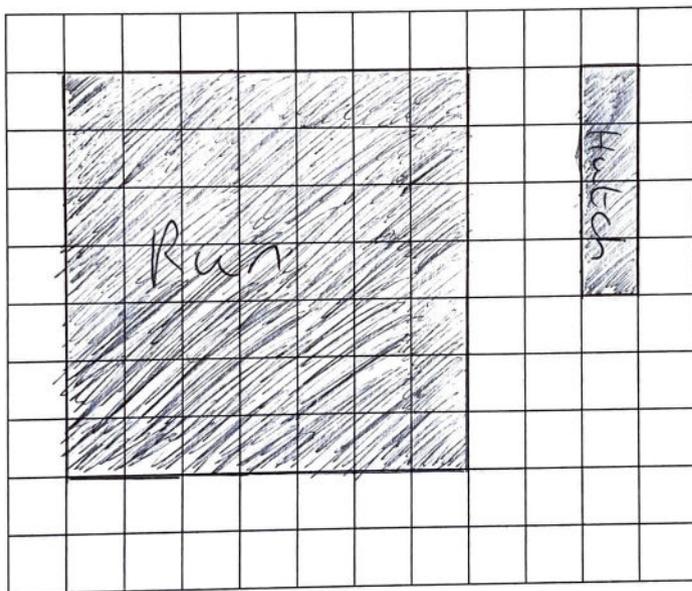
- rectangular 200 cm by 50 cm.

The rabbit hutch will be in a corner inside the rabbit run.

The grid below is a plan of the lawn.

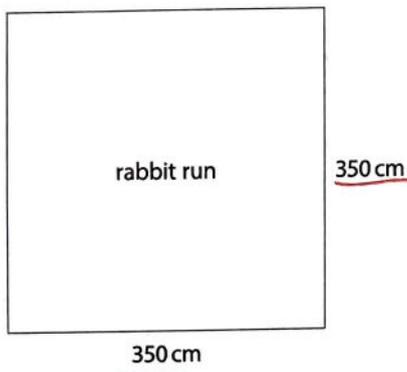
- (a) Draw a space for the rabbit run and the rabbit hutch on the grid.
Remember to use the key.

(4)



Key: 1 square on the grid is 50 cm by 50 cm on the lawn

Ben needs to put wire fencing around the rabbit run.



Wire fencing is sold in rolls of length 6 m.
The fencing can be joined.

Ben has 3 rolls of wire fencing.

(b) Are 3 rolls of wire fencing enough to go around the rabbit run?

(4)

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

$$350 + 350 + 350 + 350 = 1400 \text{ cm}$$

$$= 14 \text{ m}$$

$$6 \times 3 = 18 \text{ m}$$

$$18 > 14$$

Yes.

(Total for Question 5 is 8 marks)

6 Ben wants to compare different types of rabbit food.

He knows that

- 500 g of dried rabbit food contains 90 g of fibre
- 30% of the weight of hay is fibre.

Ben thinks that 500 g of hay has twice as much fibre as 500 g of dried rabbit food.

Is Ben correct?

Show why you think this.

Show a check of your working.

(4)

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

$$30\% = 0.3$$

$$0.3 \times 500 = 150 \text{ g}$$

$$90 \times 2 = 180 \text{ g}$$

$$180 > 150$$

Ben is not correct.

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

~~$150 \div 0.3 = 500$~~

Use the box below to show your check.

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



$150 \div 0.3 = 500$

(Total for Question 6 is 4 marks)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

SECTION C: Eye care centre**Answer all questions in this section.****Write your answers in the spaces provided.**

- 7 Carrie works at an eye care centre.

Amal has an eye test at the eye care centre.

The table below shows some information about the results of her eye test in 2017 and in 2015.

Date of test	Lens strength needed	
	left lens	right lens
2017	1.25	2.25
2015	1.5	2.75

NB all figures are positive.

Amal wants to know which lens strength has changed the most.

- (a) Which lens strength has changed the most?

(3)

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

$$\text{Left: } 1.5 - 1.25 = 0.25$$

$$\text{Right: } 2.75 - 2.25 = 0.5$$

Right changed the most.

After her eye test, Amal needs to pay

- £25 for her eye test
- £155 for the frames
- £39.50 for the lenses
- insurance for her frames and lenses.

The table below shows the cost of insurance.

Total cost of frames and lenses	Cost of insurance
Below £101	£9
£101 – £200	£19
£201 – £300	£29
Over £300	£39

(b) How much does Amal have to pay in total?

(4)

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

$$£155 + £39.50 = £194.50.$$

Insurance is £19.

$$£194.50 + £25 + £19 = £238.50$$

(Total for Question 7 is 7 marks)

- 8 George has an eye test.
These are part of his results.

Contact lens strength needed	
Left lens	Right lens
- 3.00	- 4.00

George wants to know which number is smaller - 3.00 or - 4.00

(a) Which is the smaller number - 3.00 or - 4.00?

(1)

Write your answer in the box below.

- 4.00
Right lens.

George has these two options for contact lenses.

Option A

£108 for 90 pairs

Option B

£1.15 each pair

George wants to buy 90 pairs of contact lenses.
He wants to pay as little as possible.

- (b) Which option should George use?
Show a check of your working.

(3)

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

$$£1.15 \times 90 = £103.50$$

$$< £108$$

Option B

Use the box below to show your check.



$$£103.50 \div 90 = £1.15$$

(Total for Question 8 is 4 marks)

9 Carrie wants to record information about the type of eyewear people like.

She needs a data collection sheet to show

- their age (under 20, 20 to 60, over 60)
- which type of eyewear people like (glasses only, contact lenses only or both).

(a) Design a data collection sheet for Carrie.

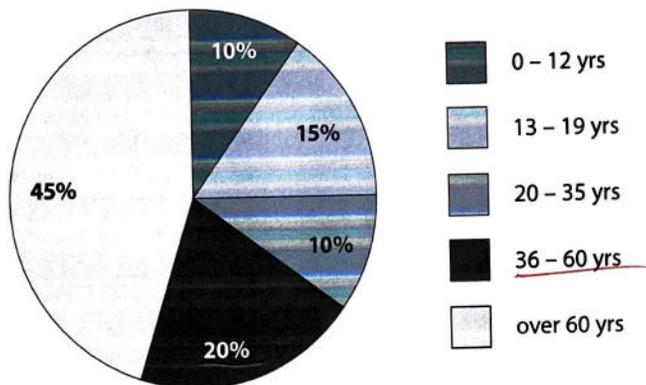
(3)

Use the box below for your data collection sheet.

	Glasses	Contacts	Both
<20			
20-60			
>60			

Carrie has this information about the age of people who used the eye care centre.

Age of people



Carrie says

The pie chart shows that a quarter of the people using the eye care centre were 36 to 60 years old.

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

(2)

Use the box below to explain your answer.

$$\frac{1}{4} = 25\% \neq 20\%$$

No

(Total for Question 9 is 5 marks)

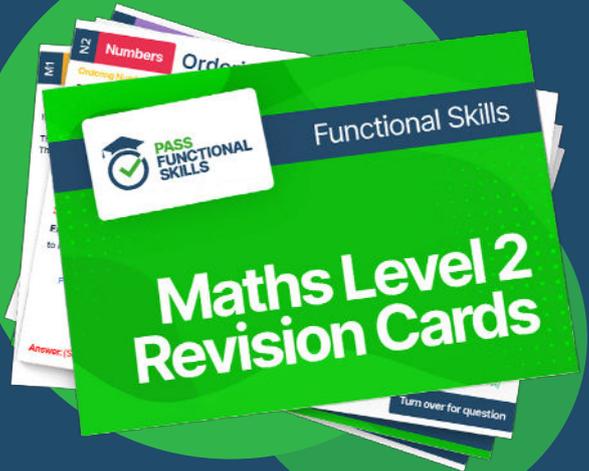
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