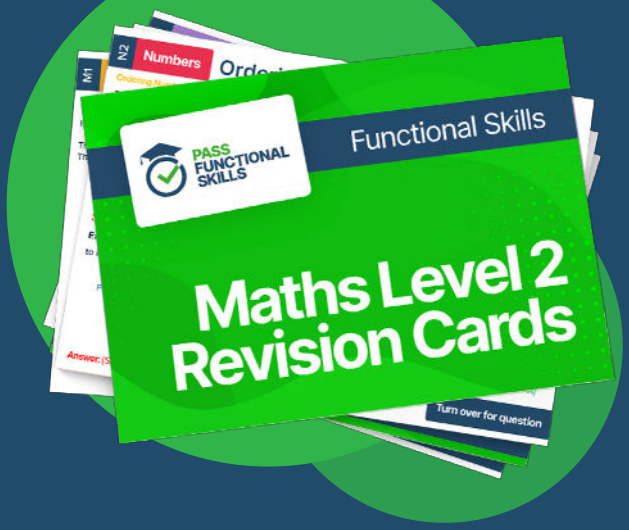
Functional Skills

Mathematics Level 2

Practice

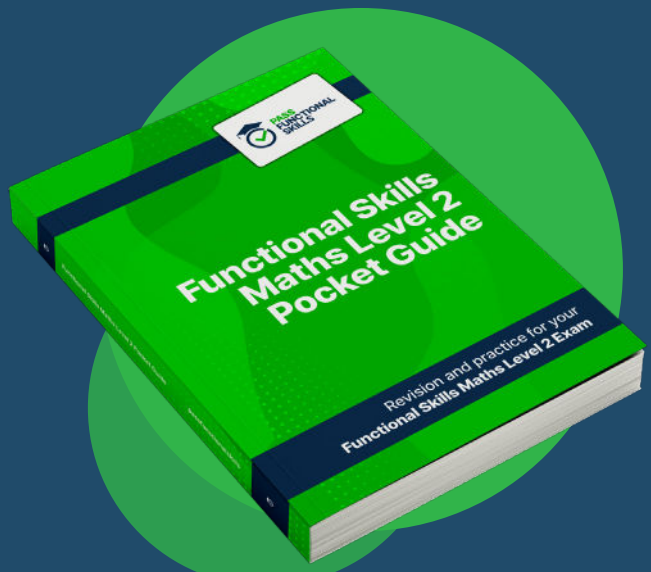
PASS FUNCTIONAL SKILLS

Functional Skills Maths
Level 2 Practice Papers



Functional Skills Maths
Level 2 Revision Cards

Functional Skills English Level 2
Practice Papers & Revision Cards



Functional Skills Maths
Level 2 Pocket Revision Guide

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Mathematics Level 2
Online Practice
Assessment

The Practice Assessment for Level 2 Functional Skills Mathematics can be viewed on the XAMS platform by clicking here.

LEVEL 2 FUNCTIONAL SKILLS QUALIFICATION IN MATHEMATICS

SECTION A - QUESTION AND ANSWER PAPER
NON-CALCULATOR – 30 MINUTES
PRACTICE ASSESSMENT 1 (FSM209P)

Do not open this paper until you are told to do so by the invigilator.

Overall assessment marks available: **60**
Overall assessment time limit: **2 HOURS**

There are **TWO** Sections to this assessment:

- **Section A** includes Task 1. You **must not** use a calculator for this section.

  Total marks available: 15. Time limit: 30 minutes
- **Section B** includes Task 2, 3 and 4. You can use a non-scientific calculator for this section

  Total marks available: 45. Time limit: 1 hour and 30 minutes

For Section A you need:

- This question and answer paper
- A pen with black or blue ink
- A pencil
- A ruler and a protractor

INTERNET ACCESS IS NOT PERMITTED AND YOU MUST NOT USE A CALCULATOR

The invigilator will stop the assessment after 30 minutes. You must hand in this question and answer paper at this point.

The invigilator will then hand out **Section B** and a non-scientific calculator. You will then have a further 1 hour and 30 minutes to complete **Section B**.

Instructions

1. Please sign and date below to confirm that your details are correct and that you have understood the instructions.
2. Read each task and question carefully.
3. Remember to show all your workings out clearly.
4. The number of marks available for each question is shown in brackets. Use these marks to guide you on how long to spend on each question.
5. Answer **all** questions using the space provided on this question and answer paper.
6. If you have time, check your work for **Section A** at the end. Once you have handed in this question and answer paper, you will not be able to check this again.
7. If you use extra paper, write your name, learner number and the question number you are answering on it and securely attach it to this question and answer paper.

Learner name:	
Learner number:	
Centre number:	
Signature:	
Today's date:	

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Section A

Question 1

What is 4.2 as a fraction of 33.6? (1 mark)

Show your calculations and/or workings out here:

$\frac{4.2}{33.6} = \frac{42}{336} = \frac{21}{168} = \frac{7}{56} = \frac{1}{8}$

Write your answer in this box:

$\frac{1}{8}$

Question 2

Calculate the pressure exerted by a force of 8000 newtons on an area of 25m^2. (2 marks)

Pressure = Force ÷ Area

Show your calculations and/or workings out here:

pressure = force ÷ area
= 8000 ÷ 25
= 320

$25\overline{)8000}$ = 320

Write your answer in this box:

320 newtons/m^2

Question 3

Put the following fractions in order of size: (1 mark)

$\frac{7}{3}$ $\frac{5}{9}$ $\frac{7}{10}$ $\frac{3}{7}$ $\frac{4}{5}$

$2.33\ldots$ $0.55\ldots$ 0.7 $0.428\ldots$ 0.8

Write your answer in this box:

$\frac{7}{3}$ $3\overline{)7.0^{1}0^{1}0}$ $2.33\ldots$ $\quad$ $\frac{5}{9}$ $9\overline{)5.0^{5}0^{5}0}$ $0.55\ldots$

$\frac{3}{7}$ $7\overline{)3.0^{3}0^{2}0}$ $0.428\ldots$ $\quad$ $\frac{4}{5}$ $5\overline{)4.000}$ 0.8

In order: $\frac{3}{7}$ $\frac{5}{9}$ $\frac{7}{10}$ $\frac{4}{5}$ $\frac{7}{3}$

Question 4

There are two red pens, eight purple pens and six yellow pens in a box.

One pen is chosen at random from the box.

What is the probability that the chosen pen is red or purple? Give your answer as a percentage.

(2 marks)

Show your calculations and/or workings out here:

$2 + 8 + 6 = 16$ pens in total

10 are either red or purple

So $\frac{10}{16} = \frac{5}{8}$

Write your answer in this box:

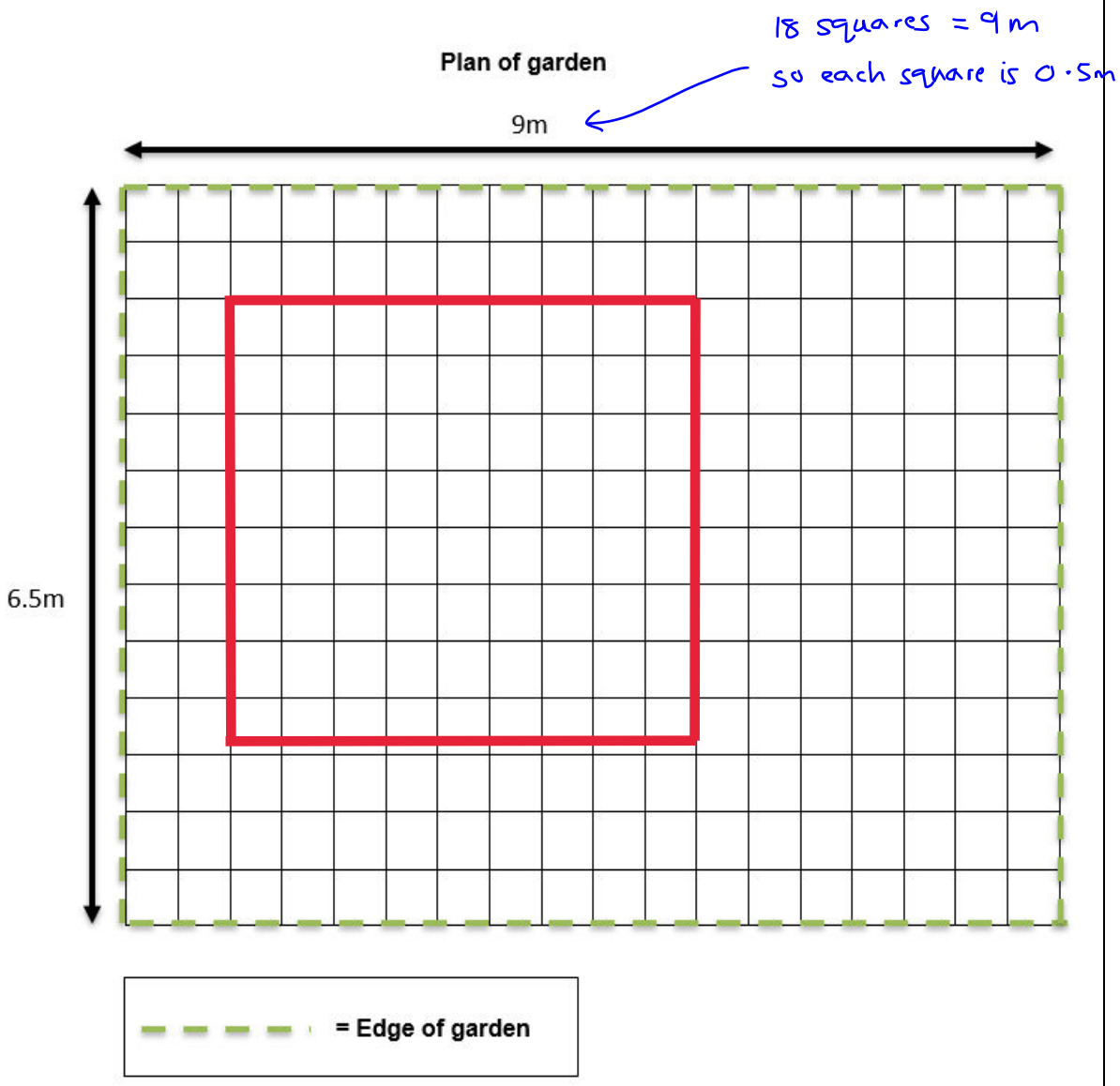
62.5%

For Markers Use Only

Question 5

John wants to build a workshop in his garden. The workshop will be rectangular, 4.5m long by 3.9m wide. The workshop must be **at least** 0.75m from the edge of the garden.
Add a scale drawing of the workshop to the plan of the garden below:

(3 marks)



For Markers Use Only

Show your calculations and/or workings out here:

If 0.5m is one square:

4.5m must be $\frac{4.5}{0.5} = \frac{9}{1}$ = 9 squares

3.9m must be $\frac{3.9}{0.5} = \frac{7.8}{1}$ = 7.8 squares

0.75m must be $\frac{0.75}{0.5} = \frac{1.5}{1}$ = 1.5 squares

For Markers Use Only

Question 6

Rana wants to buy a new mobile phone. The cheapest price she has found in the UK is £260, but Rana's uncle found the same phone for $310 in the USA.

Rana thinks the mobile phone bought in the UK is cheaper.

Is she correct? Give a reason for your answer. (3 marks)

×0.8

$1 = £0.80

Show your calculations and/or workings out here:

$310 is 310 × 0·8 = £248

UK phone cost £260

USA phone cost £248

310
× 8
248.0

Write your answer and reason in this box:

Rana is wrong – the USA phone is cheaper

For Markers Use Only

Question 7

Alison receives an itemised phone bill for her work phone.

Call	Call duration	Call charges (£)
Call 1	00:01:31	0.195
Call 2	00:00:33	0.074
Call 3	00:01:22	0.126
Call 4	00:00:22	0.030
Call 5	00:01:46	0.210
Call 6	00:47:19	0.000
Call 7	00:32:58	0.000
Call 8	00:05:59	0.814
Call 9	00:01:19	0.123
Call 10	00:00:00	0.000
Call 11	00:00:02	0.000
Call 12	00:04.36	0.000
Subtotal		**1.862**

1.572
122

There is an error in the **subtotal** for the call charges.

How much extra has Alison been charged? (3 marks)

Show your calculations and/or workings out here:

total should be : 1.572

extra is 1.862 − 1.572
= 0.290

1.862
− 1.572
0.290

Write your answers in this box:

0.29

[End of Section A]

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LEVEL 2 FUNCTIONAL SKILLS QUALIFICATION IN MATHEMATICS

SECTION B - QUESTION AND ANSWER PAPER CALCULATOR – 1 HOUR 30 MINUTES PRACTICE ASSESSMENT 1 (FSM209P)

Do not open this paper until you are told to do so by the invigilator.

Overall assessment marks available: **60**
Overall assessment time limit: **2 HOURS**

There are **TWO** Sections to this assessment:

- **Section A** – please ensure you have handed in Section A before beginning Section B
- **Section B** includes Task 2, 3 and 4. You can use a non-scientific calculator for this section.

Total marks available: 45. Time limit: 1 hour and 30 minutes.

For Section B you need:

- This question and answer paper
- A pen with black or blue ink
- A pencil
- A ruler and a protractor
- A non-scientific calculator

INTERNET ACCESS IS NOT PERMITTED
You now have a further 1 hour and 30 minutes to complete **Section B**.

Instructions

1. Please sign and date below to confirm that your details are correct and that you have understood the instructions.
2. Read each task and question carefully.
3. Remember to show all your workings out clearly.
4. The number of marks available for each question is shown in brackets. Use these marks to guide you on how long to spend on each question.
5. Answer **all** questions using the space provided on this question and answer paper.
6. If you have time, check your work for **Section B** at the end.
7. If you use extra paper, write your name, learner number and the question number you are answering on it, and securely attach it to this question and answer paper.
8. At the end of this section (**Section B**), hand in this question and answer paper and all notes to the invigilator.

Learner name:	
Learner number:	
Centre number:	
Signature:	
Today's date:	

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For Markers Use Only

Section B

Question 8

463 students take an exam and 19 fail. What percentage of students fail the exam?

(2 marks)

Show your calculations and/or workings out here:

$\frac{19}{463} \times 100 = 4 \cdot 1\ \%$

Write your answer in this box:

$4 \cdot 1\ \%$

Question 9

Put the following decimals in order of size: (1 mark)

2.122 2.962 22.36 22.8 2.112

Write your answer in this box:

$2 \cdot 112 \quad 2 \cdot 122 \quad 2 \cdot 962 \quad 22 \cdot 36 \quad 22 \cdot 8$

For Markers Use Only

Question 10

Marta owns a property that she rents out to tenants. The yearly rental income she receives is less than the median average yearly rental income of other similar rental properties in the area.
Marta currently receives a rental income of £795 per calendar month.

Properties in local area	Yearly rental income (£)
Property 1	8250
Property 2	12500
Property 3	11100
Property 4	10500
Property 5	9200
Property 6	10200
Property 7	9900
Property 8	11700

By what percentage is Marta's yearly rental income **below** the median average yearly rental income of the other properties?

(5 marks)

8250 9200 9900 10200 10500 11100 11700 12500

median = $\frac{10200 + 10500}{2}$

$= 10350$

For Markers Use Only

Show your calculations and/or workings out here:

median yearly income is £10,350

Marta's yearly income is $795 \times 12 = £9540$

Percentage difference is $\frac{10350 - 9540}{10350} \times 100 = 7.826\%$

Write your answer in this box:

7.8 %

For Markers Use Only

Question 11

Marta puts £5000 of the income earned from renting out her property into a savings account paying compound interest at a rate of 2.4% per annum.
How much will Marta have in the account after two years?

(3 marks)

Show your calculations and/or workings out here:

$5000 \times 1.024 \times 1.024 = £5242.88$

Write your answer in this box:

£5242.88

For Markers Use Only

Question 12

Marta wants to purchase another property to rent out. She has £61500 cash for the deposit and the house she wants to buy is valued at £192300.

Marta can borrow the outstanding amount on a mortgage providing her loan-to-value (LTV) is below 75%. LTV is calculated using the following formula:

Loan-to-value (LTV) = Amount borrowed ÷ house value × 100

Is Marta able to purchase the property? Give a reason for your answer.

(4 marks)

Show your calculations and/or workings out here:

she needs to borrow 192300 − 61500 = 130800

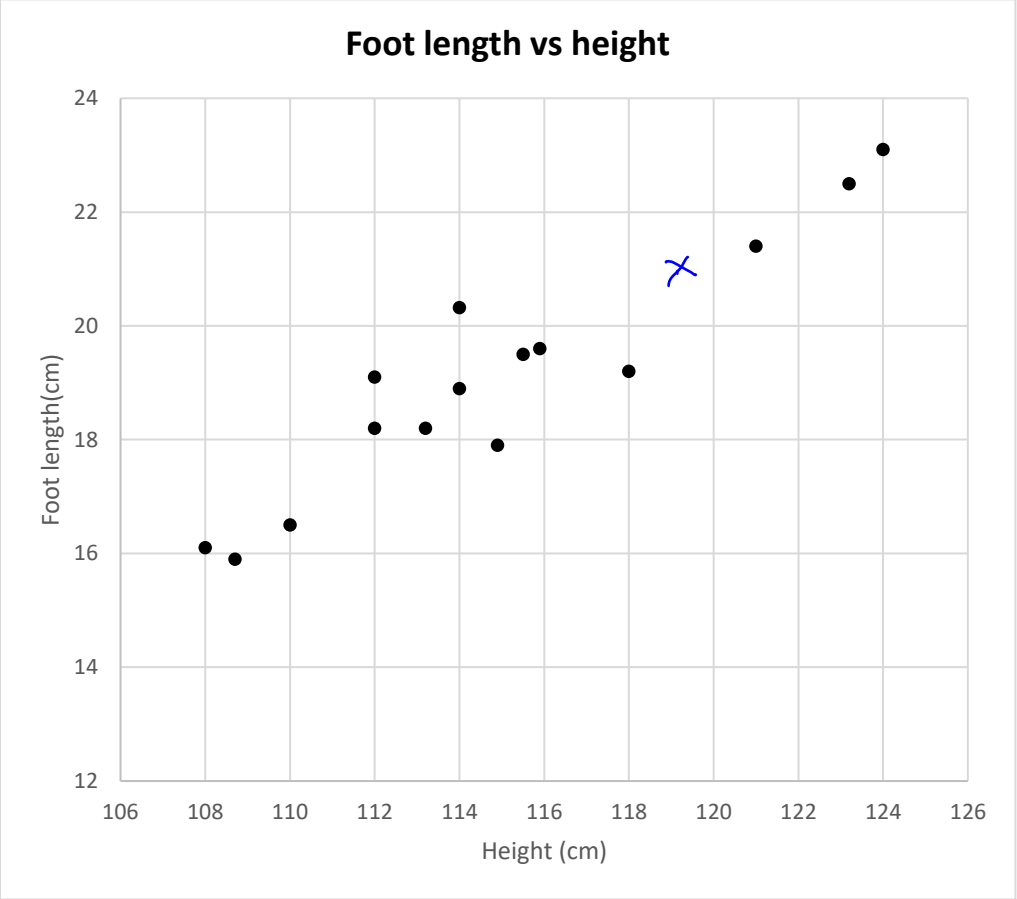
LTV = 130800 ÷ 192300 ×100
= 68.019 %

Write your answer and reason in this box:

Her LTV is below 75%, so yes, she can buy the property

Question 13

The scatter graph below shows the height and foot length of 15 males:



The table below shows information about Student *P* :

Foot Length (cm)	Height (cm)
20.9	119.3

Add student *P*'s data to the graph. (1 mark)

For Markers Use Only

Question 14

Calculate 3.315 × 7.991 (1 mark)

Show your calculations and/or workings out here:

Write your answer in this box:

26·490165

For Markers Use Only

Question 15

What is $\frac{7}{4}$ expressed as a decimal? (1 mark)

Show your calculations and/or workings out here:

7 ÷ 4 = 1.75

Write your answer in this box:

1.75

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For Markers Use Only

Question 16

A gym asks its members to complete a customer satisfaction survey.

One of the questions asks how many times they used the gym last month.

The frequency has been partially completed. The remaining answers are shown below:

16	**12**	**16**	**21**	**12**	
29	**23**		**18**		**10**
	24	**20**	**19**	**11**	
		16			**20**
21	**17**		**20**	**21**	

Number of times the gym was used last month	Frequency	midpoint	midpoint × frequency
0-4	6	2	6 × 2 = 12
5-9	5	7	5 × 7 = 35
10-14	4	12	4 × 12 = 48
15-19	6	17	6 × 17 = 102
20-24	8	22	8 × 22 = 176
25-29	1	27	1 × 27 = 27
	total: 30		total: 400

Calculate an **estimate** of the mean number of gym visits.

(6 marks)

For Markers Use Only

Show your calculations and/or workings out here:

$400 \div 30 = 13.333...$

Write your answer in this box:

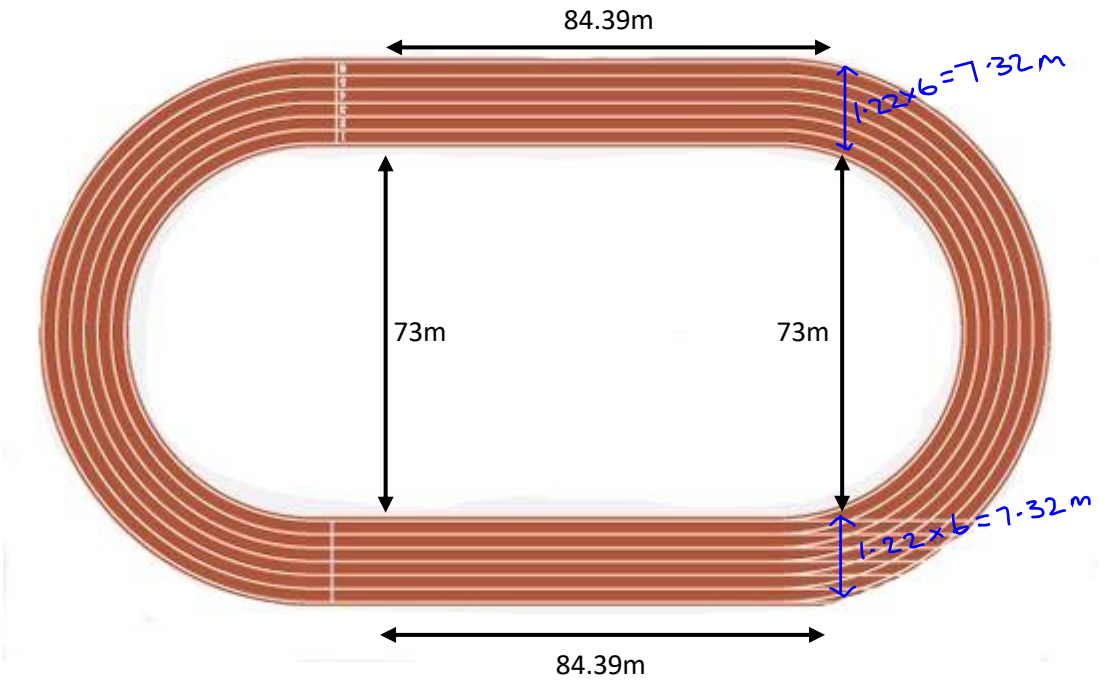
Estimate of the mean number of gym visits = 13

For Markers Use Only

Question 17

The gym has an outdoor running track as shown in the diagram below:

Diagram not to scale



The running track has six lanes and each lane is 1.22m wide.

Holly runs along the **outside edge** of the running track. She wants to run a minimum of 1200m.

π = 3.142

Will Holly run 1200m if she completes three laps of the track? Explain your answer. (6 marks)

For Markers Use Only

Show your calculations and/or workings out here:

diameter to outside edge = 7·32 + 73 + 7·32
= 87·64 m

distance around perimeter = (2 × 84 − 39) + (3·142 × 87·64)
(straight sections; ends make perimeter of circle)
= 168·78 + 275·36488
= 444·14488

distance for three laps = 3 × 444·14488
= 1332·43464

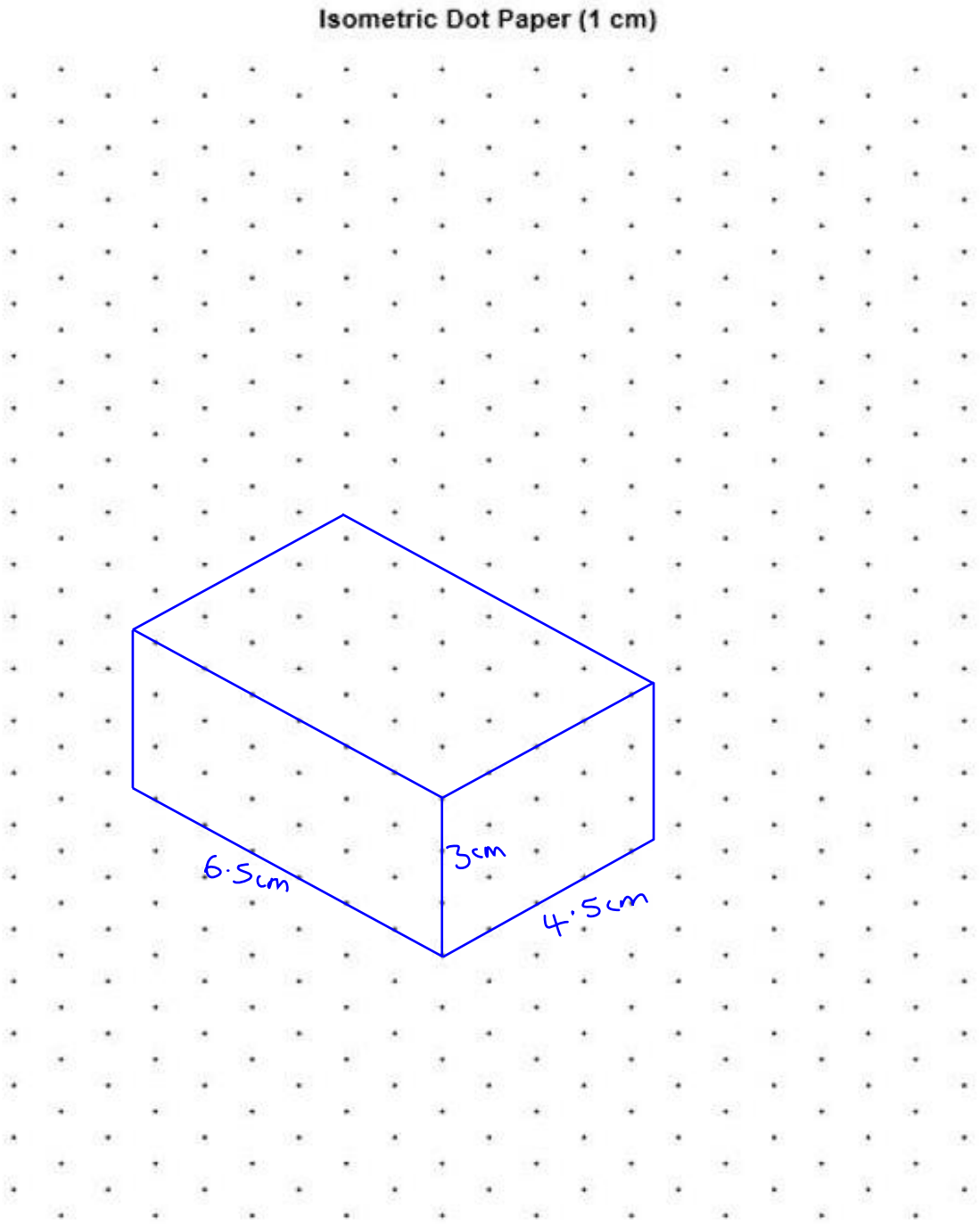
Write your answer and explanation in this box:

Yes, she will run more than 1200 m – she will run 1332·4 m

For Markers Use Only

Question 18

Draw a cuboid measuring 4.5cm by 6.5 cm by 3cm. (2 marks)



For Markers Use Only

Show your calculations and/or workings out here:

Write your answer in this box:

Question 19

Calculate 37% of 108 (1 mark)

Show your calculations and/or workings out here:

$0.37 \times 108 = 39.96$

Write your answer in this box:

39.96

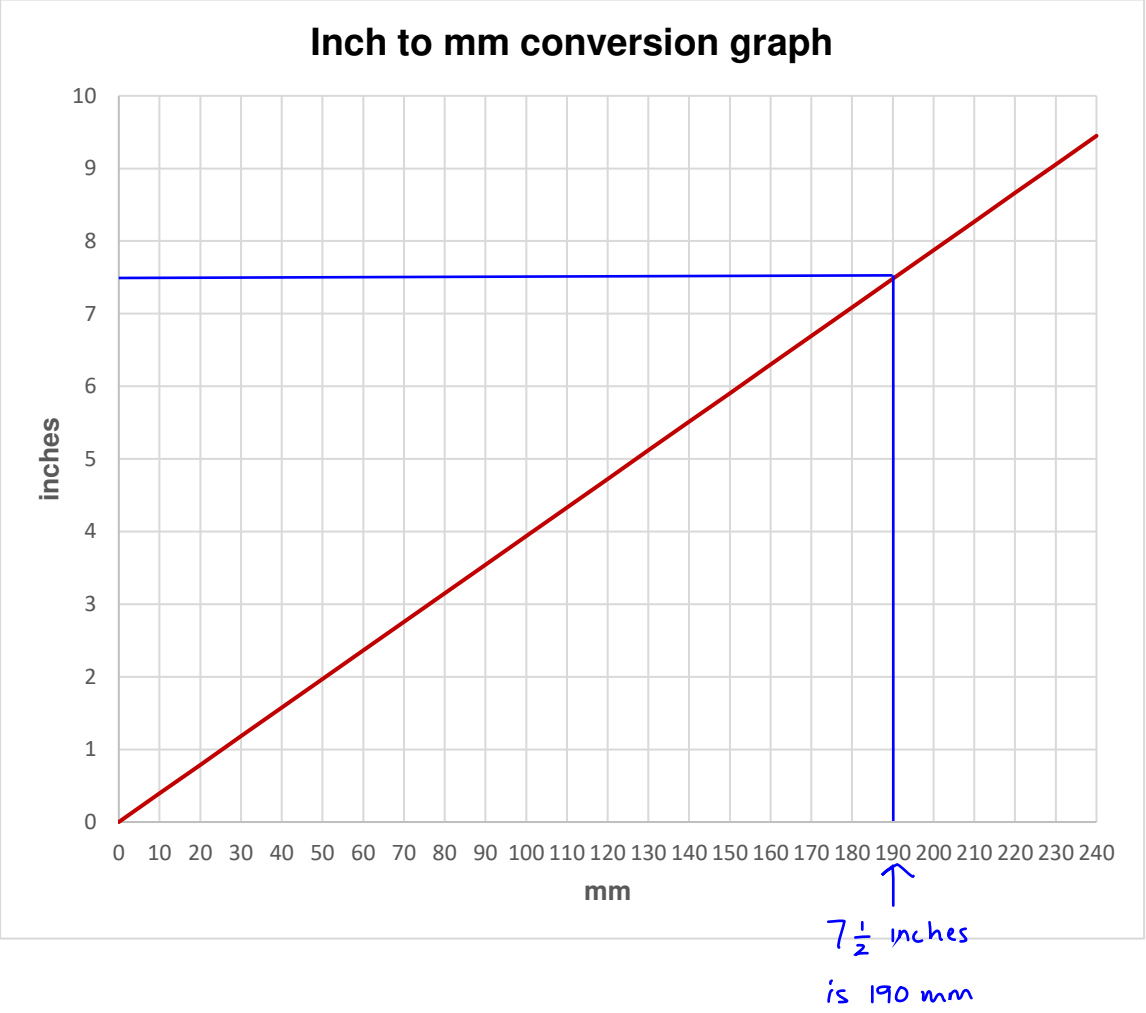
For Markers Use Only

Question 20

Harry makes bracelets using round silver beads with a diameter of 4mm. He buys the beads in packets of 800.

Harry makes each bracelet to a standard bracelet length of $7\frac{1}{2}$ inches.

Using the conversion graph below, calculate how many bracelets Harry can make from one packet of beads. (5 marks)



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Show your calculations and/or workings out here:

number of beads = 190 ÷ 4
= 47.5 (so need 48 beads)

number of bracelets = 800 ÷ 48
= 16.667
so 16 whole bracelets

Write your answer in this box:

16

For Markers Use Only

Question 21

Harry buys his beads from a wholesale supplier. A packet of 800 beads costs £59.99.

Harry receives a discount of 18%.

How much does Harry pay **per bead** to the nearest whole pence?

(4 marks)

Show your calculations and/or workings out here:

discount is $0.18 \times 59.99 = 10.7982$

so new cost is $59.99 - 10.7982 = £49.19$ for packet

cost per bead is $49.19 \div 800 = £0.06$ (so 6 pence)

Write your answer in this box:

6p

For Markers Use Only

Question 22

Dinah wants to send a parcel by post. She knows the parcel weighs 1lb 2oz.

Dinah finds a leaflet with information on the costs of posting parcels:

Format and max measurements	Max Weight	1st Class	2nd Class
Small parcels	100g	£1.06	83p
	250g	£1.50	£1.32
	500g	£1.97	£1.72
	750g	£2.72	£2.33
	1kg	£4.61	£4.16

How much will it cost Dinah to post the parcel using 2nd class?

(3 marks)

÷2·2

1kg = 2.2lbs
1oz = 28.35g

×28·35

Show your calculations and/or workings out here:

parcel is 1lb 2oz

convert 1lb to kg: 1 ÷ 2·2 = 0·4545 kg
= 454·5g

convert 0z to g: 2 × 28·35 = 56·7g

total weight of parcel = 454·5 + 56·7
= 511·2g

needs to be in 750g category so will cost £2·33

Write your answer in this box:

£2·33

[End of assessment]

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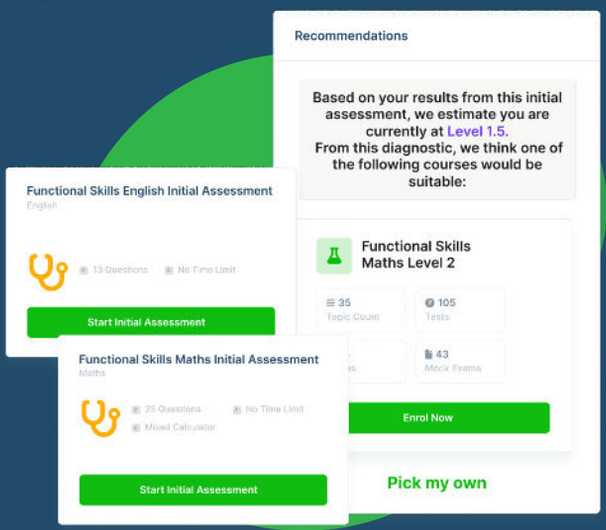
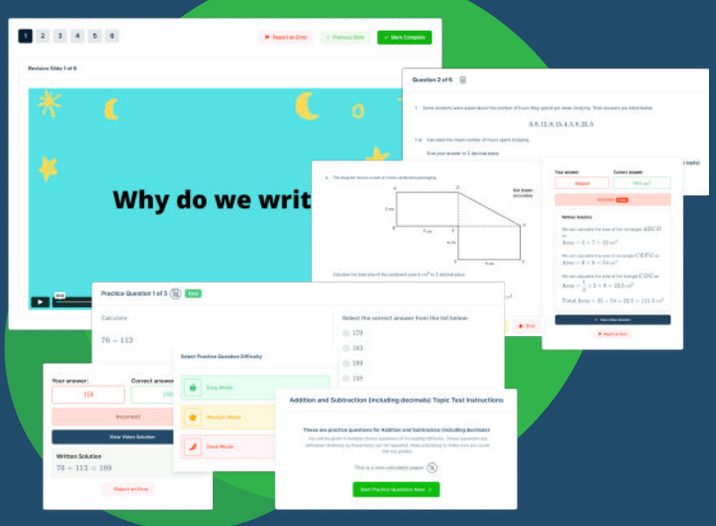
PASS FUNCTIONAL SKILLS

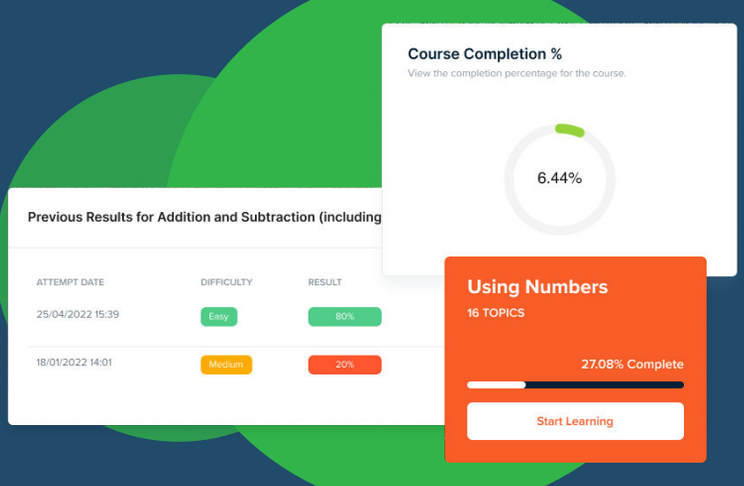
FUNCTIONAL SKILLS ONLINE COURSES



- 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
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