Functional Skills

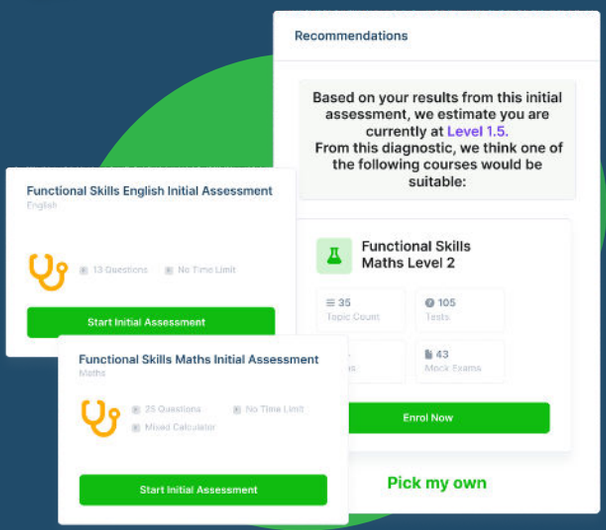
Mathematics Level 2

(Practice Assessment Set 3)

Practice

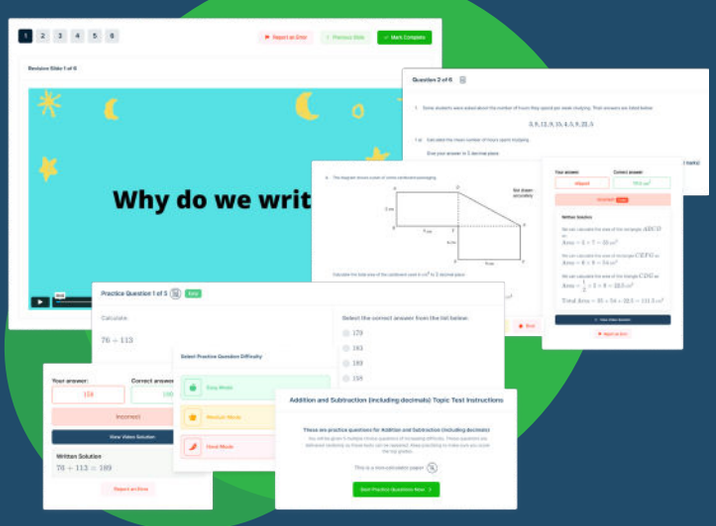
PASS FUNCTIONAL SKILLS

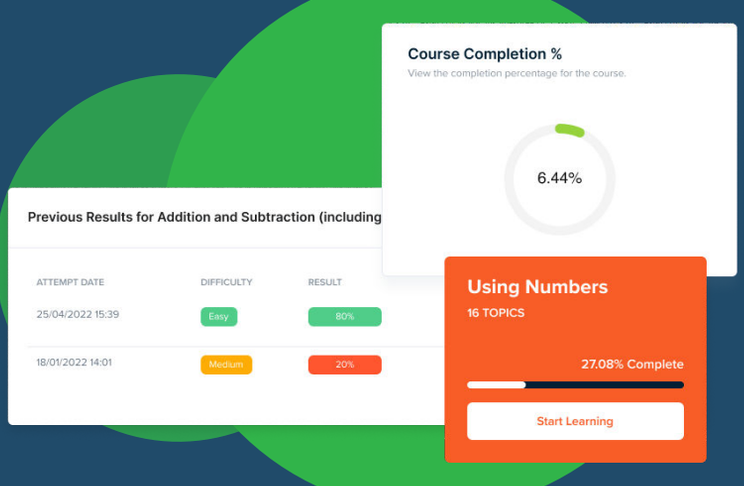
FUNCTIONAL SKILLS ONLINE COURSES



- 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

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passfunctionalskills.co.uk

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Mathematics Level 2
Online Practice Assessment Set 3

This 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 3 (FSM201P)

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:	

For Markers Use Only

Section A

Question 1

Calculate $\frac{4}{3} - \frac{1}{4}$ (1 mark)

Show your calculations and/or workings out here:

$\frac{4}{3} - \frac{1}{4} = \frac{16}{12} - \frac{3}{12}$

$= \frac{13}{12}$

Write your answer in this box:

$\frac{13}{12}$

Question 2

Put these decimals in order of size, smallest to largest: (1 mark)

0.04789 0.004709 0.479 0.04798 0.004879

Show your calculations and/or workings out here:

Write your answer in this box:

0.004709 0.004879 0.04789 0.04798 0.479

For Markers Use Only

Question 3

Calculate 35.986 + 0.28 (1 mark)

Show your calculations and/or workings out here:

$$\begin{array}{r} 35.986 \\ +\ \ 0.280 \\ \hline 36.266 \end{array}$$

Write your answer in this box.

36.266

Question 4

Calculate the mode of this set of numbers: (1 mark)

most common

10.2 10.4 10.2 10.3 10.1 10.3 10.2 10.1 10.2 10.3

Show your calculations and/or workings out here:

Write your answer in this box:

10.2

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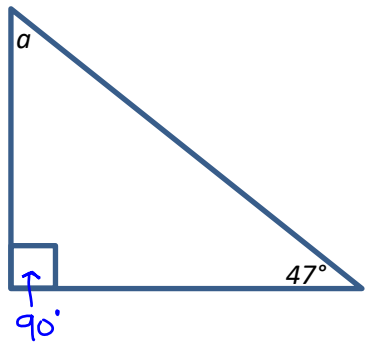
Question 5

Work out the value of the missing angle, *a*



(2 marks)

Show your calculations and/or workings out here:

angles in a triangle add to 180°

So $a = 180 - 90 - 47$

$= 90 - 47$

$= 43°$

Write your answer in this box:

43

Question 6

Elsa works as a volunteer for a forest conservation agency. Elsa and her team must plant 63000 new yew and oak trees each year in the ratio 5:3.

Elsa's team has planted 3623 oak trees so far this year. How many more oak trees do Elsa's team need to plant?

(3 marks)

Show your calculations and/or workings out here:

$5+3=8$ parts

1 part $= 63000 \div 8$
$= 7875$

$$8\overline{)63000} = 07875$$

3 parts $= 3 \times 7875$
$= 23625$
↑ oak trees needed

$$7875 \times 3 = 23625$$

already planted 3623 oak trees, so need $23625 - 3623$ more

$$23625 - 3623 = 20002$$

need to plant 20,002 more oaks

Write your answer in this box:

20,002

Question 7

A tree planting team usually has 4 volunteers and together they can plant 45 trees per hour. Assuming all volunteers plant trees at the same rate, how many trees could 5 volunteers plant in one hour?

(2 marks)

Show your calculations and/or workings out here:

In an hour, 4 people plant 45 trees

1 person can plant $45 \div 4 = 11.25$ trees

5 people can plant 11.25×5

$= 56.25$ trees

So 56 whole trees

$$4\overline{)45.00} = 11.25$$

$$1125 \times 5 = 5625$$

Write your answers in this box:

56

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For Markers Use Only

Question 8

The table below shows the number of visitors to the Forest Conservation Centre in years 2017 and 2018.

Month	2017	2018
January	Centre closed	
February		
March	1013	1032
April	1028	1278
May	987	1113
June	1520	1622
July	1692	1654
August	1321	1421
September	1254	1142
October	Centre closed	
November		
December		

The median number of visitors for 2017 is 1254. Elsa thinks this was greater than the median number of visitors for 2018, and that the visitor numbers per month in 2018 were more consistent than in 2017.

Is she correct? (4 marks)

2018

1032 1113 1142 1278 1421 1622 1654

median

Show your calculations and/or workings out here.

Median for 2017 is 1254
Median for 2018 is 1278
} Elsa is wrong – the median is higher in 2018

Range for 2017 is 1692 – 987 = 705
Range for 2018 is 1654 – 1032 = 622
} Elsa is right – the range is lower in 2018 so visitor numbers more consistent in 2018

$$\begin{array}{r} {}^{\circ}16{}^{8}92 \\ -\ 987 \\ \hline 705 \end{array} \qquad \begin{array}{r} 1654 \\ -\ 1032 \\ \hline 0622 \end{array}$$

Write your answer in this box.

[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 3 (FSM201P)

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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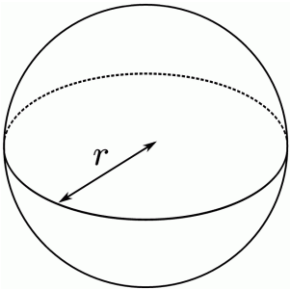
Section B

Question 9

Use the formula to work out the surface area of a sphere with a radius of 7.4cm.
Give your answer to 3 decimal places.

(3 marks)

Diagram not to scale



Surface Area = $4\pi r^2$
Use 3.14 for π

Show your calculations and/or workings out here:

$4 \times 3.14 \times 7.4 \times 7.4$

$= 687.7856 \text{ cm}^2$

$= 687.786 \text{ cm}^2$ (to 3dp)

Write your answers in this box:

687.786

For Markers Use Only

Question 10

Tom works at a leisure centre. His current working hours are listed in the table below:

Day	Duties	Shift Times	Break	hours worked
Monday	Reception	06:30 - 13:00	30 minutes	6
Tuesday	Reception	06:30 - 16:30	60 minutes	9
Wednesday	Lifeguard	13:00 - 20:30	60 minutes	6.5
Thursday	Reception	06:30 - 13:00	30 minutes	6
Friday	Reception	06:30 - 13:00	30 minutes	6
Saturday	Day Off			
Sunday	Lifeguard	10:00 - 16:00	30 minutes	5.5

Tom is not paid for his break times and he earns a standard rate of £8.16 per hour.

On Wednesdays and Sundays, Tom works as a lifeguard for 1.45 times his normal rate of pay per hour.

Tom thinks he could work less hours and earn the same amount of money per week by only working as a lifeguard.

Approximately how many hours per week would Tom need to work as a lifeguard to match his current weekly pay?

(5 marks)

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Show your calculations and/or workings out here:

As a lifeguard he earns $8.16 \times 1.45 = £11.83$ per hour

on reception he does $6+9+6+6 = 27$ hours
so earns $27 \times 8.16 = £220.32$

As a lifeguard he does $6.5 + 5.5 = 12$ hours
so earns $12 \times 11.83 = £141.96$

current weekly pay is $220.32 + 141.96 = £362.28$

To match current weekly pay, needs to do $\frac{362.28}{11.83} = 30.624$ hours

so 31 whole hours

Write your answer in this box:

31

For Markers Use Only

Question 11

Tom receives a pay rise. His new standard rate of pay per hour has risen from £8.16 to £8.82. By what percentage has Tom's standard rate of pay per hour increased?

(2 marks)

Show your calculations and/or workings out here:

$$\frac{8.82 - 8.16}{8.16} \times 100$$

$$= 8.088\%$$

Write your answer in this box:

8.09 %

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Question 12

A circular jacuzzi at the leisure centre has a diameter of 2.25m and a constant depth of 0.62m.

The manager records the midday temperature of the jacuzzi every day for a week:

Mon	Tues	Wed	Thurs	Fri	Sat	Sun
37.77°c	37.72°c	37.04°c	37.78°c	37.72°c	37.71°c	37.77°c

37.04 37.71 37.72 37.72 37.77 37.77 37.78

He uses the formula below to estimate the number of kilowatt hours (kwh) used by the jacuzzi per day.

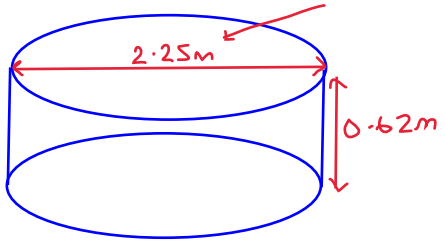
Electricity per day in kwh = Volume of water in jacuzzi in m^3 × median midday temperature in °c ÷ 0.85.

Tom thinks the electricity used by the jacuzzi is under 100Kwh per day. Is Tom correct?

(5 marks)

Show your calculations and/or workings out here:

so radius = 2.25 ÷ 2 = 1.125



volume of water = 3.14 × 1.125 × 1.125 × 0.62

= 2.46391875 m^3

median temperature = 37.72°

Electricity used = 2.46391875 × 37.72 ÷ 0.85

= 109.34 Kwh

more than 100 Kwh

so Tom is wrong

For Markers Use Only

Write your answer and reason in this box:

No, it uses 109·34 kWh, so not below 100 kWh

Question 13

Put these fractions in order of size, smallest to largest:

$\frac{3}{5}$ $\frac{5}{4}$ $\frac{5}{8}$ $\frac{3}{2}$ $\frac{1}{4}$ (1 mark)

0·6 1·25 0·625 1·5 0·25

Show your calculations and/or workings out here:

Write your answer in this box:

$\frac{1}{4}$ $\frac{3}{5}$ $\frac{5}{8}$ $\frac{4}{5}$ $\frac{3}{2}$

Question 14

A bag contains 67 blue balls, 20 green balls and 47 red balls. What is the probability of picking out a blue ball **or** a red ball? Give your answer as a decimal.

(2 marks)

Show your calculations and/or workings out here:

67 + 20 + 47 = 134 balls in total

67 + 47 = 114 are blue or red

So $\frac{114}{134}$ $114 \div 134 = 0.8507$

Write your answer in this box:

0·85

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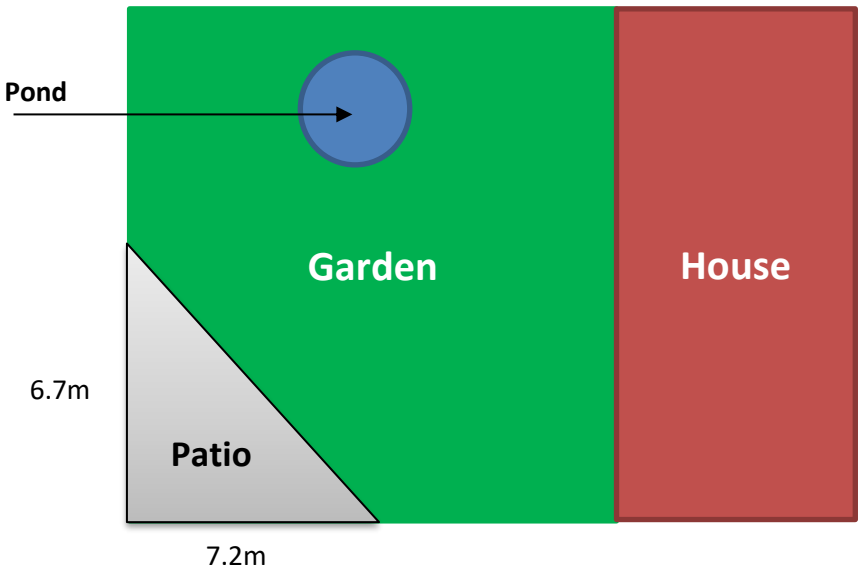
Question 15

Mia wants to build a patio area in the corner of her garden. A diagram of the garden is shown below:

Diagram not to scale



Mia has prepared the patio and wants to put down either paving stones or decking boards. She wants to spend the least amount of money possible.

Should Mia choose decking or paving stones to cover the patio area?

(6 marks)

Decking Wood

Board width 120mm 0.12m
Board length 2400mm 2.4m
£5.25 each

Paving Stones

500mm x 500mm 0.5m x 0.5m
£4.50 each

Offer- Buy 10 for £40

Show your calculations and/or workings out here:

Area of patio is $\frac{6.7 \times 7.2}{2} = 24.12 m^2$

Decking

area of each plank is $0.12 \times 2.4 = 0.288 m^2$

number of planks needed is $24.12 \div 0.288 = 83.75$ (so 84 whole planks)

costs $84 \times 5.25 = £441$

Stones

area of each stone is $0.5 \times 0.5 = 0.25 m^2$

number of stones needed is $24.12 \div 0.25 = 96.48$ (so 97 whole stones)

buy 90 using the offer, so $9 \times 40 = £360$

then extra 7 cost $7 \times 4.50 = £31.50$

$360 + 31.50 = £391.50$

Write your answer in this box:

Paving stones

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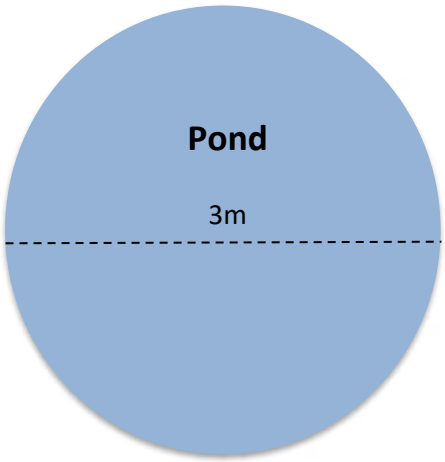
Question 16

Mia wants to build a wall around the circular pond in her garden. The pond has a diameter of 3m. Mia will use bricks that are 21cm long x 10cm wide x 6.5cm high. The wall will be built to a height of 6 bricks. 0·21m 0·1m 0·065m

How many bricks will Mia need to build the wall?

(3 marks)

Diagram not to scale



Show your calculations and/or workings out here:

Circumference of Pond = 3·14 × 3
= 9·42 m

Join bricks lengthways, so need $\frac{9·42}{0·21}$ = 44·86 (or 45 whole bricks) in each layer

Need 6 layers, so need 45 × 6 = 270 bricks

Write your answer in this box:

270

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Question 17

The pond has been filled with 2750 litres of water and needs to be treated to stop algae. One bottle of liquid pond treatment is required per 250 gallons of water. How many bottles of liquid pond treatment will Mia need to treat the pond?

1 gallon = 4.55 litres

÷ 4·55

(3 marks)

Show your calculations and/or workings out here:

2750 litres is $2750 \div 4 \cdot 55$ gallons

$= 604 \cdot 3956$ gallons

number of bottles $= 604 \cdot 3956 \div 250$

$= 2 \cdot 418$

so 3 whole bottles

Write your answer in this box:

3

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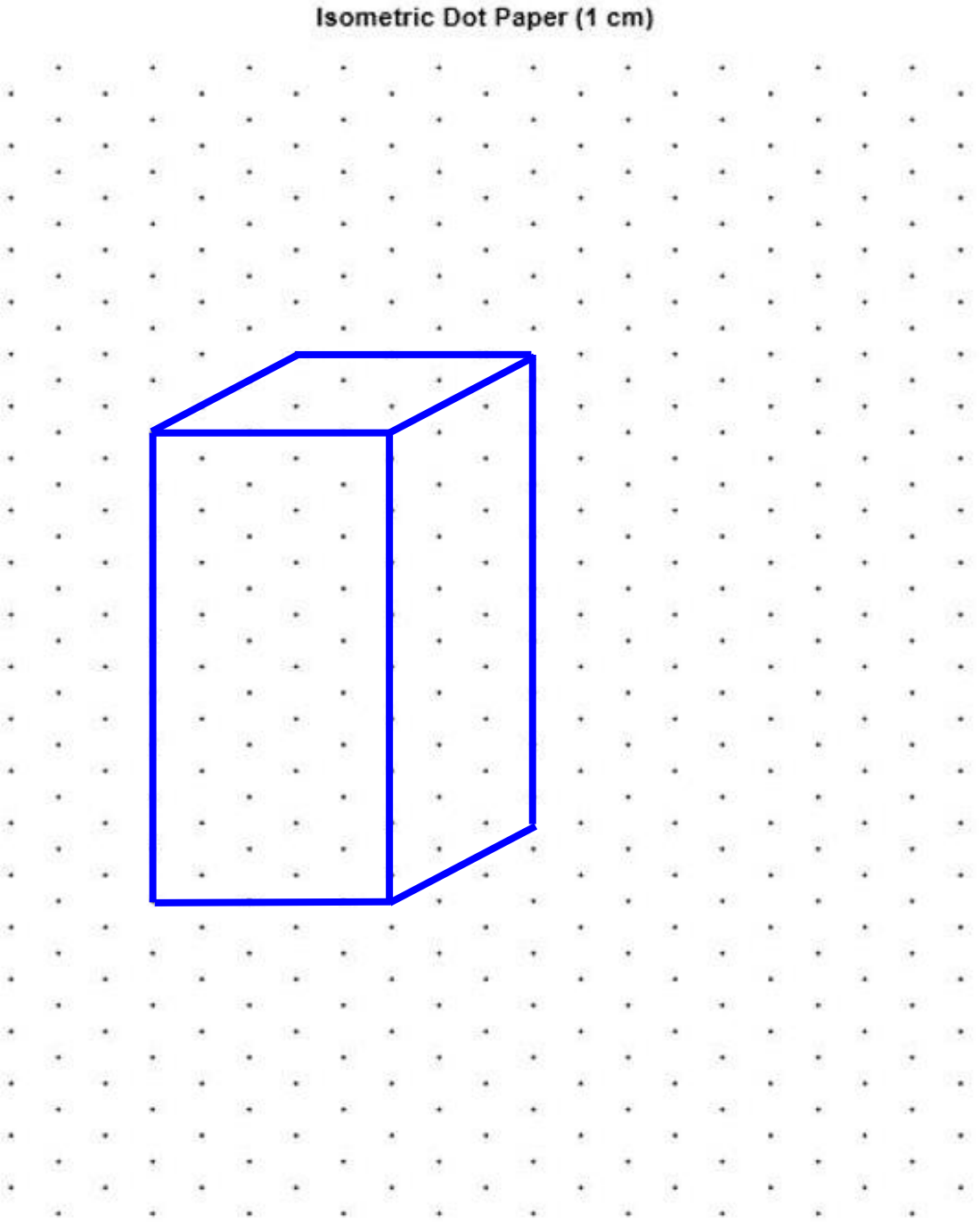
Question 18

A cuboid has the dimensions 9 cm x 5 cm x 3 cm.

Draw the cuboid on the isometric paper below.

(2 marks)



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Question 19

Calculate $41 - 3^2 \times 4.5$ (1 mark)

Show your calculations and/or workings out here:

$41 - 9 \times 4.5$

$= 41 - 40.5$

$= 0.5$

Write your answer in this box:

0.5

For Markers Use Only

Question 20

A running club asks its members to complete a survey. One of the questions asks members how many races they entered last year.

The answers from the 25 members are shown below:

10	**11**	**24**	**12**	**13**
5	**3**	**0**	**17**	**9**
12	**18**	**11**	**6**	**16**
21	**14**	**16**	**13**	**17**
15	**11**	**5**	**7**	**0**

Complete the table and estimate the mean number of races per club member last year.

(6 marks)

Number of Races entered	Frequency	Midpoint	frequency × midpoint
0-4	3	2	3 × 2 = 6
5-9	5	7	5 × 7 = 35
10-14	9	12	9 × 12 = 108
15-19	6	17	6 × 17 = 102
20-24	2	22	2 × 22 = 44
	total: 25		total: 295

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Show your calculations and/or workings out here:

$295 \div 25 = 11 \cdot 8$

12 to nearest race

Write your answer in this box:

Estimated Mean Number of Races = 12

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Question 21

Aminah is a member of the running club. She ran 9 races last year. The distances she ran in each race are shown in the table below.

Race	Distance
Yorkshire Winter Run	10 miles
Charity Run	5 km $5 \times \frac{5}{8} = 3.125$ miles
Charity Run	10 km $10 \times \frac{5}{8} = 6.25$ miles
Redditch Half Marathon	13.1 miles
Bristol Half Marathon	13.1 miles
Charity Fun Run	3 miles
Birmingham Run	10 km $10 \times \frac{5}{8} = 6.25$ miles
Liverpool Marathon	26.2 miles
Charity Run	10 km $10 \times \frac{5}{8} = 6.25$ miles

How many miles did Aminah run in all her races last year?

(3 marks)

Use the conversion 5 miles = 8 km

Show your calculations and/or workings out here:

8 km = 5 miles

1 km = $\frac{5}{8}$ miles

total number of miles $= 10 + 3.125 + 6.25 + 13.1 + 13.1 + 3 + 6.25 + 26.2 + 6.25$

$= 87.275$

Write your answer in this box:

87.275

For Markers Use Only

Question 22

Aminah completes a 26.2 mile marathon in 5 hours and 30 minutes. What is her average running pace in minutes per mile?

(3 marks)

Show your calculations and/or workings out here:

5 hours = 5 × 60 mins
= 300 mins

So 5 hours 30 mins = 330 mins

covers 26.2 miles, so pace is 330 ÷ 26.2 = 12.595 mins per mile

Write your answer in this box:

12.6

[End of assessment]

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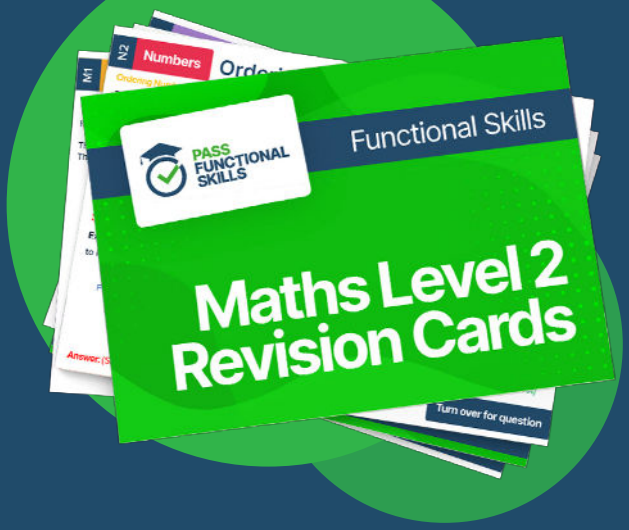
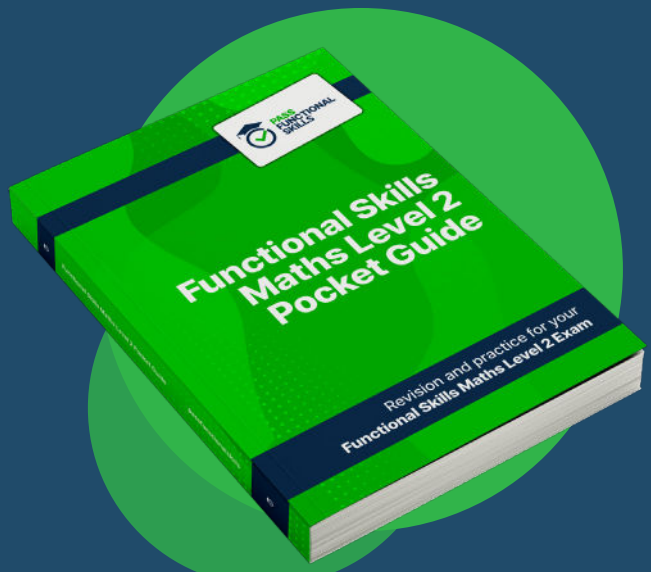
Functional Skills Maths
Level 2 Practice Papers



Functional Skills Maths
Level 2 Revision Cards

Functional Skills English Level 2
Practice Papers & Revision Cards



Functional Skills Maths
Level 2 Pocket Revision Guide

Or visit
passfunctionalskills.co.uk