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Level 1 Functional Skills Mathematics
Sample 4

City & Guilds
A City & Guilds Group Business

Version: 1.1

Duration: 1 hour 20 minutes
Total marks: 45 marks

SECTION 2 – CALCULATOR PERMITTED

Candidate name (first, last)

First

Last

Candidate enrolment number

Date of birth (DDMMYYYY)

Assessment date (DDMMYYYY)

Centre number

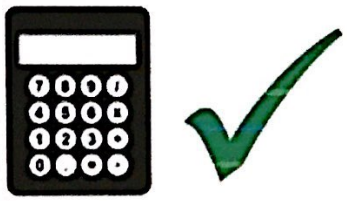
Candidate signature and declaration*

• If you have used any additional answer sheets write the number of additional sheets in this box.
• Please ensure that you **staple** additional answer sheets to the **back** of this booklet, clearly labelling them with your full name, enrolment number, centre number and date in BLOCK CAPITALS.
• You must use a black or blue pen. You may use a pencil for charts and diagrams.
***I declare that I had no prior knowledge of the questions in this assessment and that I will not share information about the questions.**

Please check that your name is correctly printed on the candidate barcode label. If not, please tell the invigilator before the start of the exam.

You should have the following for this assessment

- a pen with black or blue ink.
- a pencil
- an eraser
- a 30cm ruler
- a calculator.



You must NOT use a protractor.

General instructions

- Read through each question carefully.
- You may use a dictionary.
- Show your working out (where required).
- Write all your working out and answers in this booklet.
- Check your calculations and check that your answers make sense.
- There are additional pages at the back of this booklet if you run out of space or ask the invigilator if you need additional sheets of paper.

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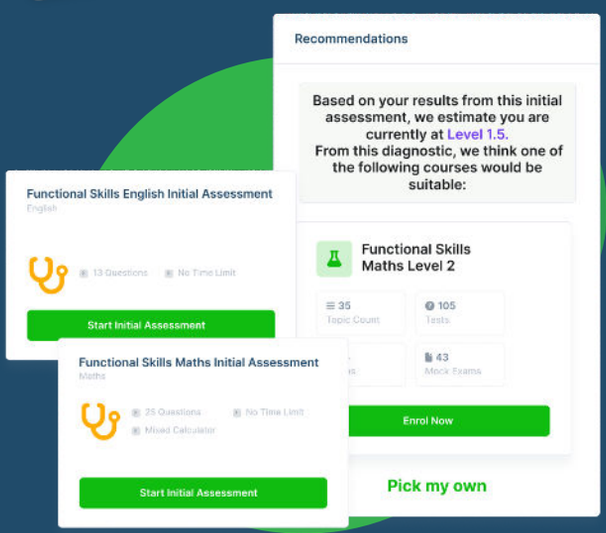
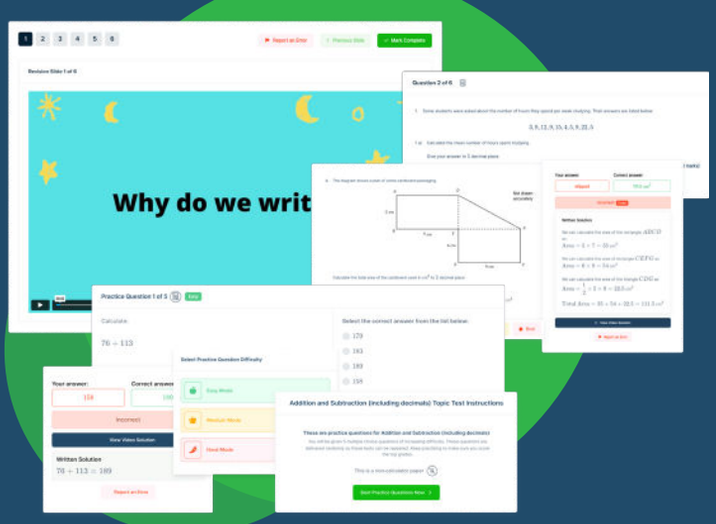
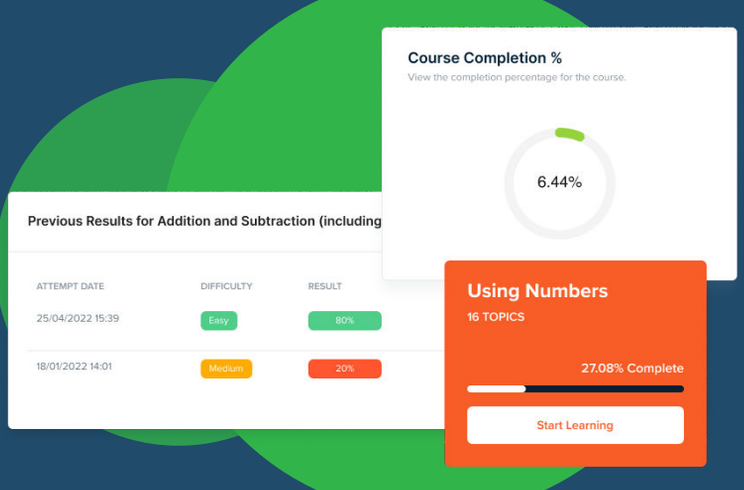
FUNCTIONAL SKILLS ONLINE COURSES



- 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

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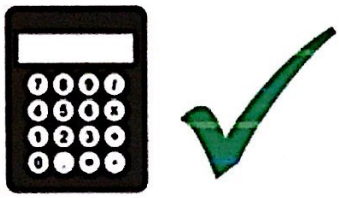
SECTION 2 – CALCULATOR PERMITTED

There are **45** marks in this section.

You should check all your work as you go along.

You may use a calculator.



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Q1

What is 0.35 as a fraction? Give your answer in its simplest form.

$\frac{7}{20}$

(1 mark)

Q2

A stadium has capacity for 28 000 people to watch sporting events.

21 500 people attended the last event held at the stadium.

Approximately, how full was the stadium?

(tick one box)

A $\frac{2}{3}$ full ☐

B $\frac{4}{5}$ full ☐

C $\frac{3}{4}$ full ☑

D $\frac{9}{10}$ full ☐

(1 mark)

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Q3

The range of temperature recorded in London one day is 8°C.

Which pair of temperatures could have been the minimum and maximum that day?

(tick one box)

A 10°C and 16°C ☐

B 8°C and 10°C ☐

C -3°C and 4°C ☐

D -2°C and 6°C ☑

(1 mark)

Q4

74035.52 ÷ 3.7 =

[redacted] 20096

(1 mark)

Q5

What is $\frac{4}{5}$ of 690?

552

(1 mark)

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Q6

A salesperson must drive from Bristol to attend a meeting in Nottingham at 10am.

This table shows distances in miles between different places.

City	Bristol	Nottingham	Derby
Bristol		140	135
Nottingham	140		15
Derby	135	15	

He works out he needs to leave Bristol at 9am.

Is his calculation sensible?
Explain your answer.

Is his calculation sensible? *(tick one box)* **Yes** ☐ **No** ☑

Explanation 140 miles is too far to travel in one hour.

(1 mark)

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Q7

A woman wants to buy new kitchen units for £1 800

The shop offers some plans for the customer to make equal **monthly** payments.

Monthly Payment Plans	
Number of years	Total interest charged
1	5%
2	15%
3	25%

The woman wants to know how much her **monthly** payments will be if she pays for the units over **two** years.

What will the **monthly** payments be?

Show your working

£1800 × 1.15 = £2070 total pay.

2070 ÷ 24 = £86.25

£ 86.25

(3 marks)

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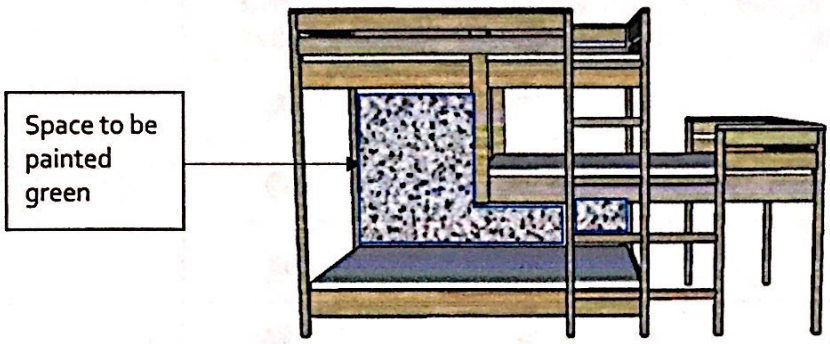
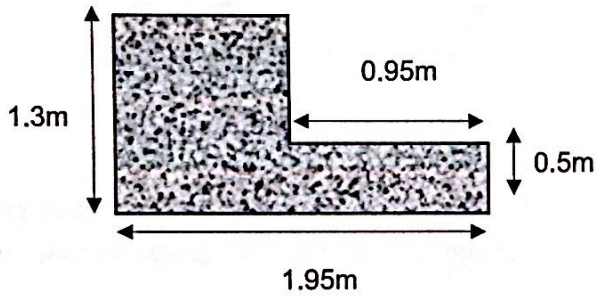
Q8

A man needs to paint the wall behind the bunk bed with a different colour next to each level of the bed.

The lower level will be painted green.



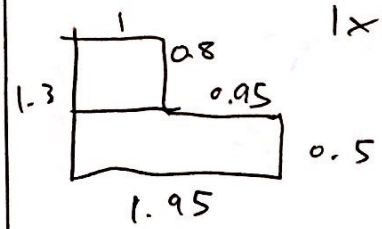
He needs to work out the area of this space.



Sketch of wall area
Not to scale

What is the area that he will paint green?

Show your working



$1 \times 0.8 + 1.95 \times 0.5 =$
$0.8 + 0.975 =$
$1.775\ m^2$

Area painted green 1.775 **m²**

(3 marks)

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Q9

A group of friends play a game of cards.

They have already taken 9 cards from the pack.

A player wants to know the probability that the next card is ♠

Card type	Number of cards in the pack at the start	Tally of cards taken already
●	2	I
♦	4	II
♠	6	
♥	6	I
♣	4	IIII
★	2	I

What is the probability that the next card is a ♠?

Give your answer as a fraction in its simplest form.

Show your working

Total cards = 2+4+6+6+4+2 = 24.

9 cards taken already so 24 − 9 = 15.

6 spades

$\frac{6}{15} = \frac{2}{5}$

$\frac{2}{5}$

(3 marks)

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Q10

A joiner has a video channel on the internet where he shares tips on how to make items for the home.

He wants to organise his videos into three suitable groups by time.

1 minute		1 minute		12 minutes		2 minutes		3 minutes		14 minutes
2 minutes		8 minutes		14 minutes		6 minutes		1 minute		7 minutes
12 minutes		4 minutes		9 minutes		11 minutes		3 minutes		14 minutes

Show how he will organise his videos.
Make one comment about what the results show you.

Show your grouping

Time length	No.
0-5 mins	8
6-10 mins	4
11-15 mins	6

Comment

There are most videos in the 0-5 group.

(4 marks)

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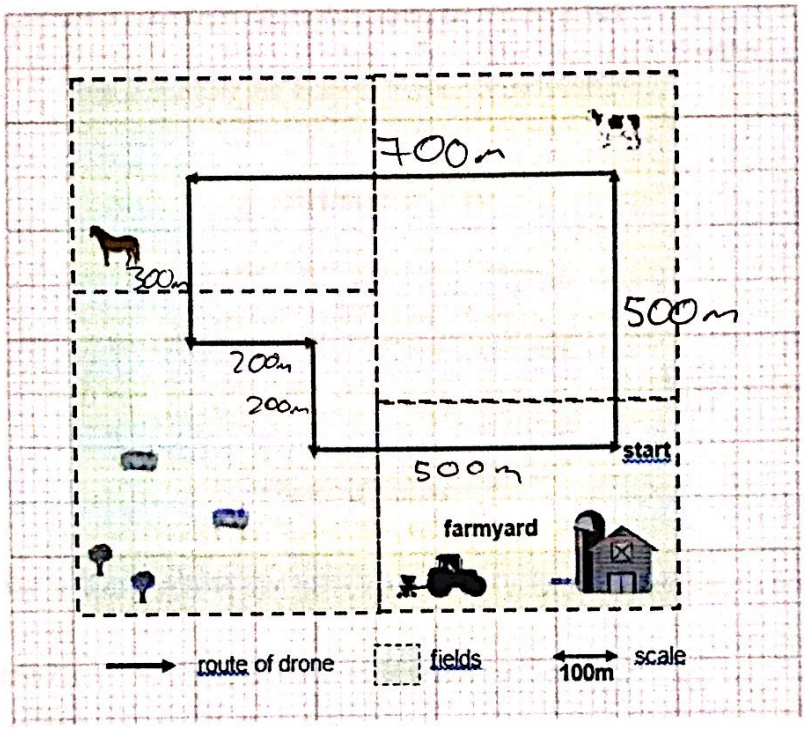
Q11

A farmer uses a drone to monitor animals.

The drone can fly a distance of 8km when its battery is fully charged.

The drone has $\frac{1}{4}$ of its battery life left.

The farmer needs to know if the drone has enough battery to complete this route shown starting from his farmyard.



Does the drone have enough battery life to complete the route?
Explain your answer with figures.

Show your working

500 + 700 + 300 + 200 + 200 + 500
= 2400m = 2.4km.

$\frac{1}{4}$ of 8km is 2km.

Does the drone have enough battery life to complete the route?

(tick one box) **Yes** ☐ **No** ☑

Explanation

2 < 2.4.

(4 marks)

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Q12

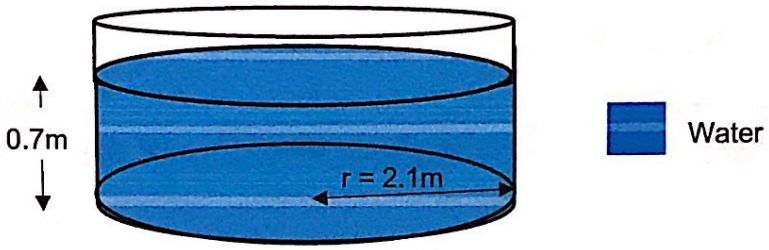
A man needs to work out what filter machine to buy for cleaning his circular swimming pool.

He uses the following formula to calculate the volume of water in his pool in litres

To find the number of litres

Step 1 Multiply the radius squared (r^2) by 3.142
Step 2 Multiply the answer to Step 1 by the height of water
Step 3 Multiply the answer to Step 2 by 1000

Diagram of pool



The man would like a filter machine that can clean the full volume of water in his pool in less than five hours.

He finds a filter machine that cleans 2000 litres of water per hour.

He needs to know if this machine will be suitable for his pool.

Will this filter machine be suitable?
Explain your answer using figures.

Show your working

$2.1^2 = 4.41$.
$4.41 \times 3.142 = 13.85622$
$13.85622 \times 0.7 = 9.699354$.
$9.699354 \times 1000 = 9699.354$ Litres.

Will this filter machine be suitable?

(tick one box) **Yes** ☑ **No** ☐

$9699.354 \div 2000 = 4.849677$ hours

which is < 5.

Explanation

(5 marks)

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Q13

A man has a flight at 19:15 on Thursday. He must arrive at the airport 2 hours before this time to check in.

He needs to know what time he should leave home.

He will park his car at the airport car park and it will take 15 minutes to get to the check in counter.

The distance from his house to the airport is 90 miles.

He will drive at an average of 60miles per hour.

What time must he leave home?

Show your working.

Takes $\frac{90}{60} = 1.5$ hours to drive there.

19:15 flight ← 2h 17:15 check in ← 15 min 17:00 car park ← 1.5h 15:30 set off

Time to leave home 15:30

(5 marks)

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Q14

A woman receives an offer to join the Pet Club at her Vets.

> **Join the Pet Club!**
>
> For just £19.99 a month, we can offer the following exclusive benefits to help keep your pet happy and healthy:
> - FREE Annual Injection
> - FREE Flea & Worm Treatment
> - 50% off Health Check

She needs to pay the following costs for her dog

- £60 for the annual injection
- £42 for flea & worm treatment every three months
- £36 for a health check every six months

Should she join the Pet Club?
Explain your answer. Include figures to support your explanation.

Show your working.

Consider for one year.
£60 injection.
4 × £42 = £168 on worm treatment
2 × £36 = £72 on health check.
Total = 60 + 72 + 168 = £300.

Should she join the Pet Club?

(tick one box) **Yes** ☑ **No** ☐

Explanation

Pet club:
12 × £19.99 + 2 × £36 × 0.5
= £275.88
< £300
Yes, pet club is £24.12 cheaper.

(6 marks)

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Q15

A principal needs to report to the governors how absence rates have changed over the last four years.

She needs to work out last year's percentage absence.

College absences	
Total absences (days)	**Total possible attendance (days)**
948	39500

What percentage of the total days were the students absent for last year?

Space for working

$\frac{948}{39500} \times 100\% = 2.4\%$

Percentage absence 2.4 **%**

She wants a chart for her report.

She finds the following extra information.

	Percentage of days absent
4 years ago	6.8%
3 years ago	5.6%
2 years ago	3.2%

Draw a chart or graph for the principal's report.

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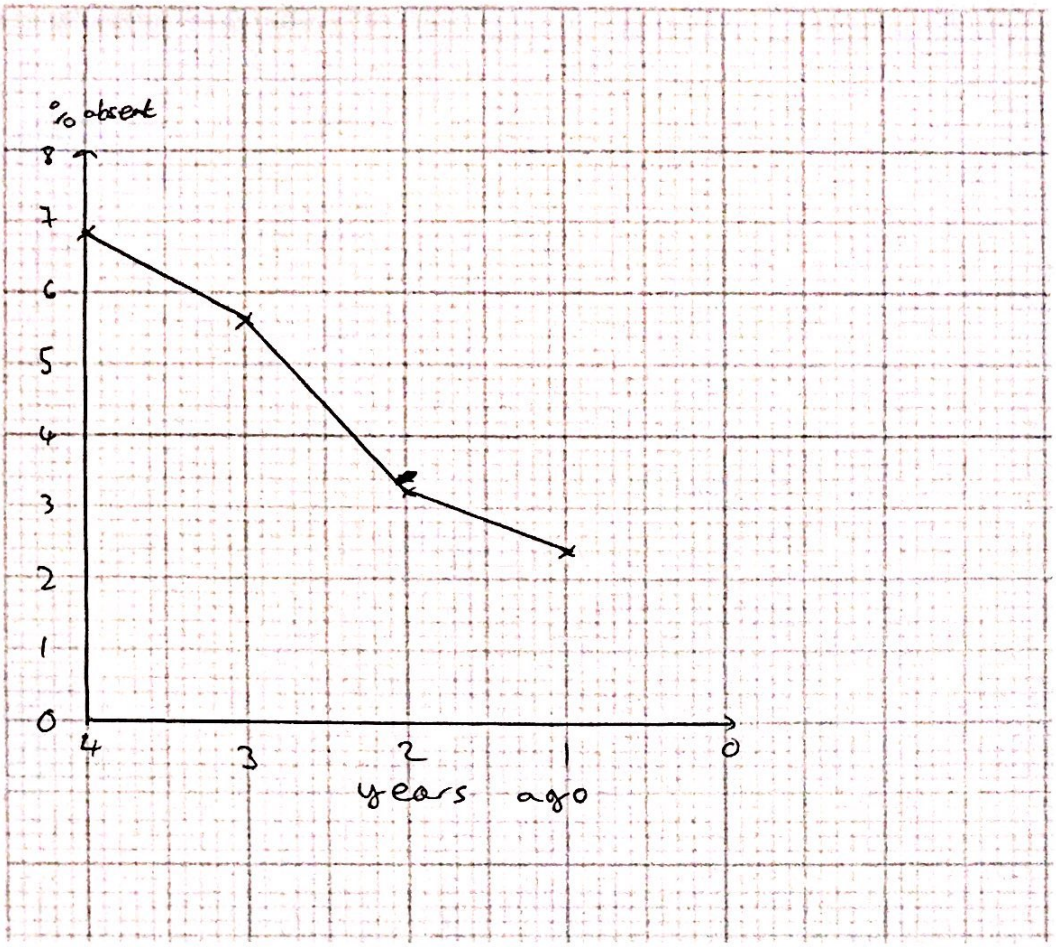

(6 marks)

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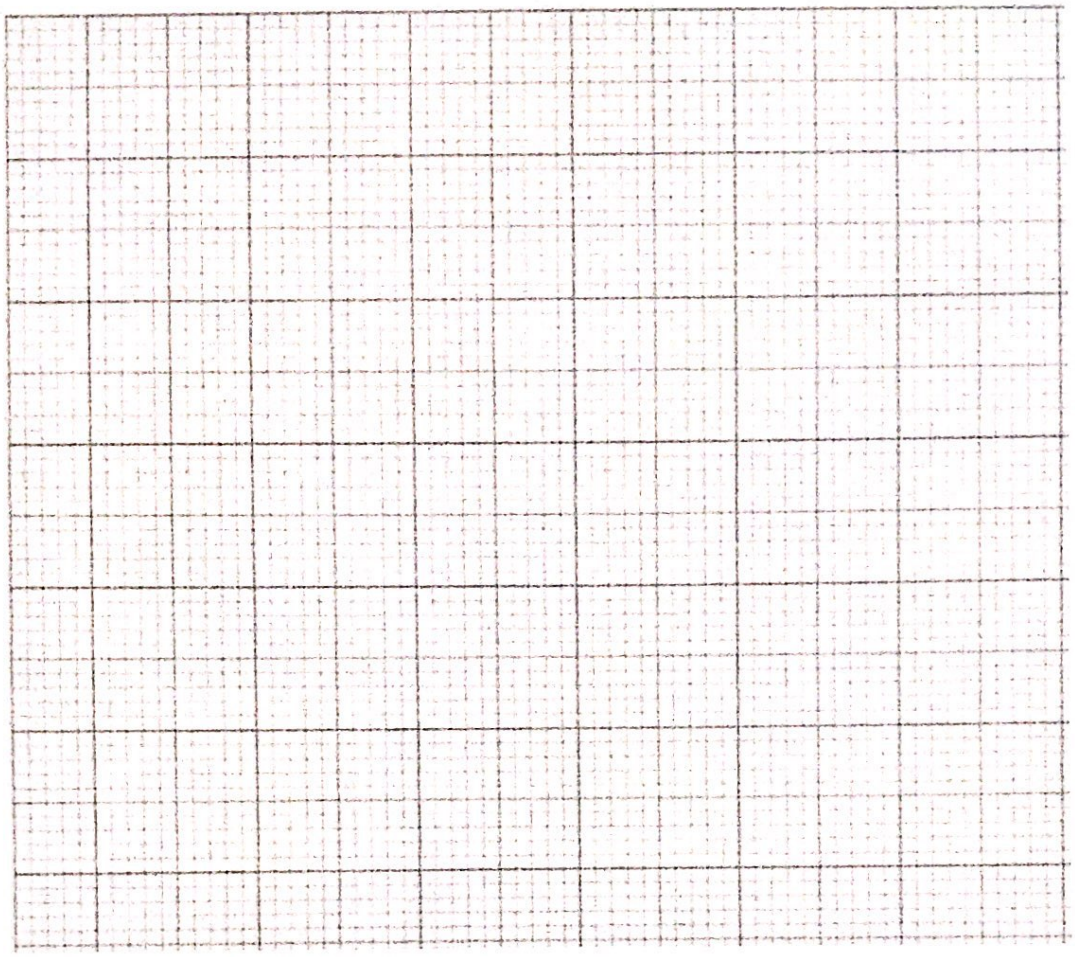
Spare graph paper for Question 15



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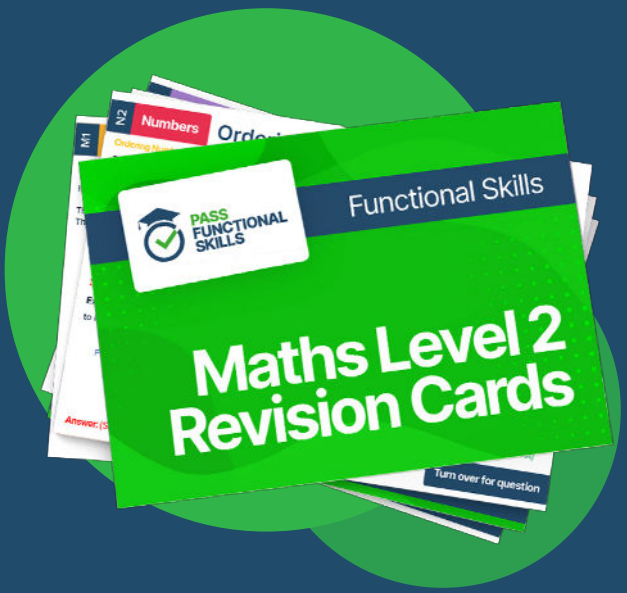

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