

Please write clearly in block capitals.

Centre number

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Candidate number

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Surname

Forename(s)

Candidate signature

Functional Skills Level 1

MATHEMATICS

Section A: Non-Calculator Paper

Section B: Calculator Paper

Paper A/B

Time allowed: 30 minutes / 1 hour 30 minutes

Materials

For this paper you must have:

- mathematical instruments.

You **must not** use a calculator for section A.

You may use a calculator for section B.

Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Answer all questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work you do not want to be marked.
- State the units of your answer where appropriate.

Information

- The marks for questions are shown in brackets.
- The maximum mark for section A is 15 and section B is 45.
- The maximum mark for this paper is 60.
- You may ask for more answer paper, graph paper and tracing paper. These must be tagged securely to this answer book.

Advice

- In all calculations, show clearly how you work out your answer.



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

Recommendations

Based on your results from this initial assessment, we estimate you are currently at **Level 1.5**. From this diagnostic, we think one of the following courses would be suitable:

Functional Skills English Initial Assessment
English
13 Questions | No Time Limit
Start Initial Assessment

Functional Skills Maths Initial Assessment
Maths
25 Questions | Mixed Calculator | No Time Limit
Start Initial Assessment

Functional Skills Maths Level 2
35 Topic Count | 105 Tests
43 Mock Exams
Enrol Now

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

Why do we write...

Practice Question 1 of 5
Calculation
 $76 + 113 = 189$

Question 2 of 5
Select the correct answer from the list below:
129
183
189
194

Written Solution
 $76 + 113 = 189$

Course Completion %
View the completion percentage for the course.

6.44%

Using Numbers
16 TOPICS
27.08% Complete
Start Learning

Previous Results for Addition and Subtraction (including

ATTEMPT DATE	DIFFICULTY	RESULT
25/04/2022 15:39	Easy	80%
18/01/2022 14:01	Medium	20%

- ✓ 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

1 Work out $19^2 - 3 \times 5 + 2$

[2 marks]

$$361 - 15 + 2 = 348$$

Answer 348

2 Calculate $17.89 + 23.47$

[1 mark]

$$\begin{array}{r} 11 \\ 17.89 \\ + 23.47 \\ \hline 41.36 \end{array}$$

Answer 41.36

3 Calculate $23.1 \div 1000$

[1 mark]

$$\overbrace{000} \quad \underline{23.1000}$$

Answer 0.0231

Turn over for next question

- 4 Jeffrey records the ages of some people that attend his gym.

~~26~~ ~~15~~ ~~28~~ ~~18~~ ~~19~~ ~~43~~ ~~53~~ ~~61~~ ~~48~~
~~28~~ 34 ~~42~~ ~~23~~ ~~25~~ ~~22~~ ~~31~~ 20 ~~19~~
~~23~~ ~~31~~ ~~43~~ ~~50~~ ~~23~~ ~~34~~ ~~27~~ ~~39~~ ~~18~~

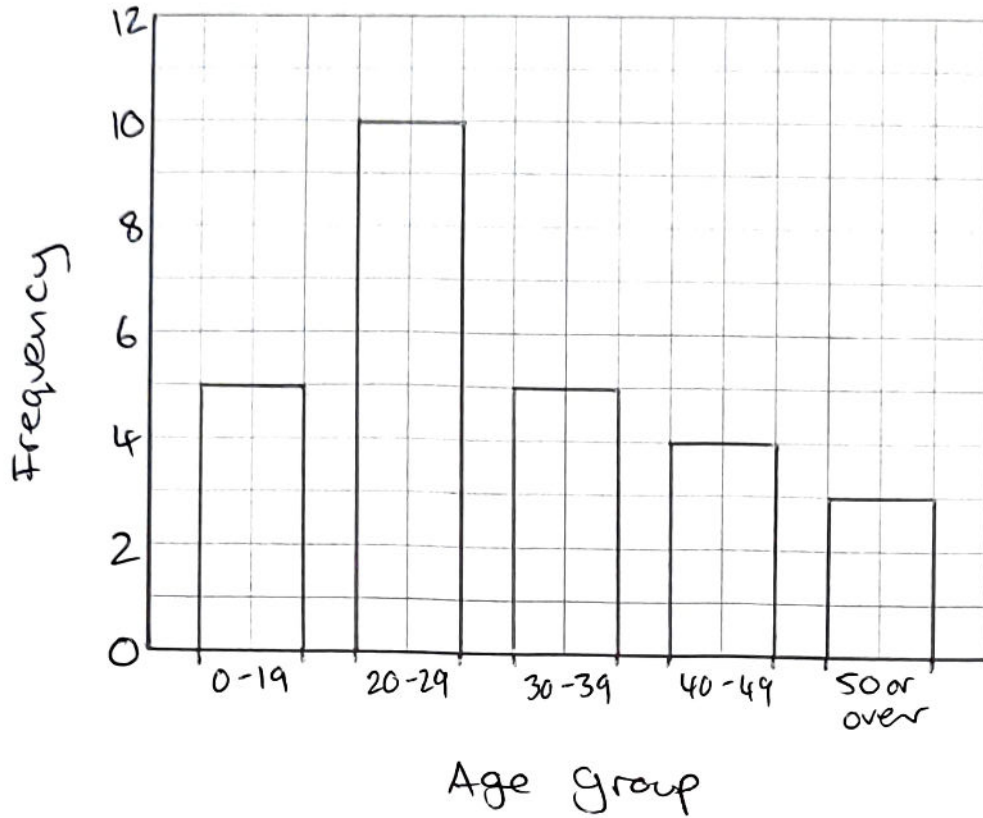
Fill in this table for Jeffrey's data.

Age	Tally	Frequency
0-19		5
20-29		10
30-39		5
40-49		4
50 or over		3

Question continues on next page

Turn over ►

4 cont. Use this table to plot a bar chart for this data on the graph paper below.



[5 marks]

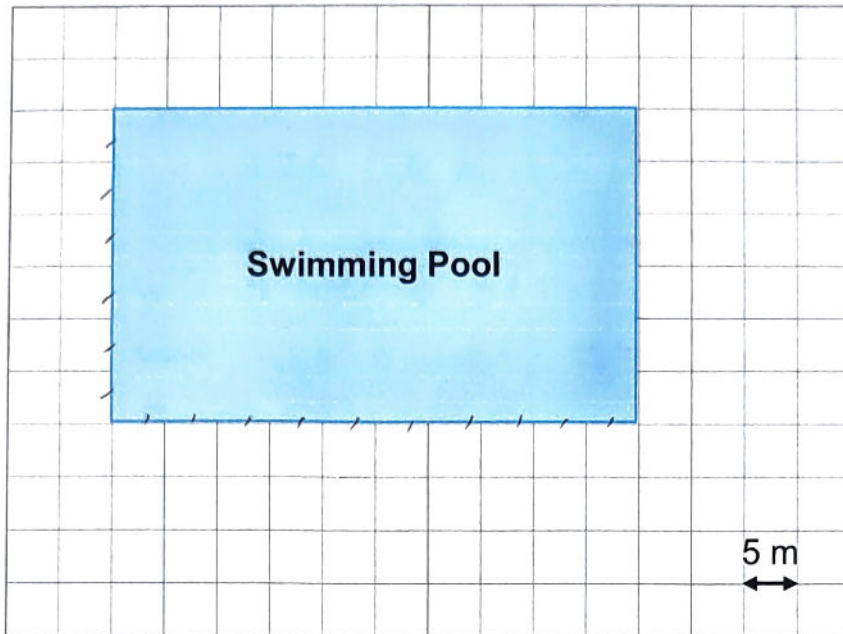
Turn over for next question

Turn over ►

5

Jeffrey's gym has a swimming pool. Jeffrey draws a scale drawing of the swimming pool on the square grid below.

What is the actual area of the swimming pool?



[3 marks]

$$6 \times 5 = 30 \text{ m} \quad , \quad 10 \times 5 = 50 \text{ m}$$

$$\text{Area} = 30 \times 50 = 1500 \text{ m}^2$$

Answer 1500 m^2

Turn over for next question

- 6 There are 120 members that attend Jeffrey's gym in total. The gym offer either a silver membership or a gold membership. The ratio of people on the silver membership to gold membership is 3:5.

How many people are there on each membership?

[2 marks]

$$\text{Total parts} = 3 + 5 = 8$$

$$1 \text{ part} = 120 \div 8 = 15$$

$$3 \times 15 = 45 \text{ silver, } 5 \times 15 = 75 \text{ gold}$$

Answer 45 silver, 75 gold

- 7 Jeffrey has a bag of various sports balls. He has 7 footballs, 3 rugby balls and 6 tennis balls.

What is the probability of Jeffrey picking a football out of the bag at random?

[1 mark]

$$\frac{7}{7+3+6} = \frac{7}{16}$$

Answer

$$\frac{7}{16}$$

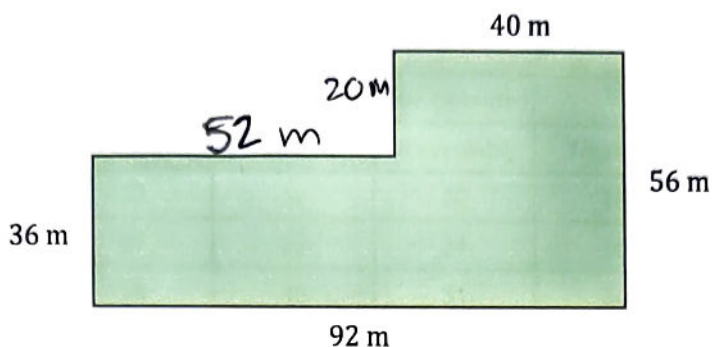
End of Section A

SECTION B : Calculator

**Answer ALL questions.
Write your answers in the spaces provided.**

Turn over ►

- 8 David is training for a charity run. As part of David's training, he runs around a field seen below. He aims to run at least 5 km.



How many **full** laps of the field will he need to run?

Assume that he can only complete **full** laps.

[3 marks]

$$\begin{aligned} \text{Perimeter} &= 36 + 52 + 20 + 40 + 56 + 92 \\ &= 296 \text{ m} = 0.296 \text{ km} \end{aligned}$$

$$5 \div 0.296 = 16.89 \dots = 17 \text{ full laps}$$

Answer 17

Turn over for next question

- 9 David records how long it takes him to run 5 km on 5 days in a week. He does this for 3 weeks.

He records his times in the table below.

	Time (minutes)				
	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1	29	32	30	33	32
Week 2	27	29	34	30	28
Week 3	28	30	31	30	33

In which week were the range of his times the greatest?

Show your working.

[2 marks]

$$\text{Week 1: } 33 - 29 = 4$$

$$\text{Week 2: } 34 - 27 = 7$$

$$\text{Week 3: } 33 - 28 = 5$$

Answer

week 2

- 10 David buys a new pair of running shoes to use for his charity run. The price of the pair of running shoes is £65, but David has a 20% off voucher.

How much will the running shoes cost David? 20% discount = 0.8

[1 mark]

$$65 \times 0.8 = £52$$

Answer

£52

Turn over for next question

- 11 There are 24 members of a church. Two thirds of the members are women.
How many of the church members are women?

[1 mark]

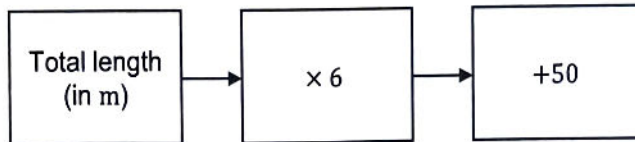
$$24 \div 3 \times 2 = 16$$

Answer

16

- 12 Delia wants to decorate her square house by putting Christmas lights on two of its sides. Her house is 17 m wide.

To calculate the number of lights she needs, she uses this rule:



Lights come in boxes of 80.

Each box costs £15.99

Calculate how much it would cost Delia to decorate her house in this way.

[4 marks]

$$17 \times 2 = 34 \text{ m length of lights}$$

$$34 \times 6 + 50 = 254 \text{ lights}$$

$$254 \div 80 = 3.175, \text{ so 4 boxes needed}$$

$$4 \times £15.99 = £63.96$$

Answer

£63.96

Turn over for next question

Turn over ►

- 13 Shauna is baking cookies for 48 people. She uses the following recipe:

Cookie recipe (serves 6)

225 g butter
125 g caster sugar
300 g plain flour
100 g milk chocolate chips

Shauna has $1\frac{3}{5}$ kg of butter in her fridge.

How much more butter does she need to be able to bake the cookies for 48 people?

Include the units in your answer.

[4 marks]

$$48 \div 6 = 8$$

$$8 \times 225 = 1800 \text{ g of butter needed}$$

$$1\frac{3}{5} = 1.6 \text{ kg} = 1600 \text{ g butter}$$

$$1800 - 1600 = 200 \text{ g butter needed}$$

Answer

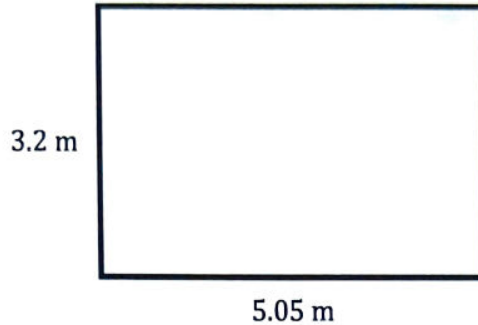
200 g

Turn over for next question

14

Bob wants to varnish his kitchen floor.

The diagram below shows the dimensions of Bob's kitchen floor.



Bob is going to give the kitchen floor 2 coats of varnish.

1 litre of varnish that Bob buys will cover 5.6 m^2 of floor.

The varnish comes in 2 litre tins, costing £14.95 per tin.

Calculate how much it would cost Bob to varnish his floor.

[5 marks]

$$\text{Area} = 3.2 \times 5.05 = 16.16 \text{ m}^2$$

$$2 \times 16.16 = 32.32 \text{ m}^2 \text{ of floor}$$

needed to be covered

$$32.32 \div 5.6 = 5.77 \dots \text{ litres needed}$$

$$5.77 \div 2 = 2.885 \dots, \text{ so 3 tins needed}$$

$$3 \times \text{£}14.95 = \text{£}44.85$$

Answer

£44.85

Turn over for next question

15

The table below shows figures for the number of ticket sales at a museum on one day.

Ticket type	Adults	Children	Concessions	Other
Tickets sold	231	105	56	12

The concession ticket type gives access to the museum to seniors and students. The ratio of seniors to students who visited the museum on this day was 4:3.

What percentage of the total ticket sales on this day were seniors?

[4 marks]

$$\text{Total parts} = 4 + 3 = 7$$

$$\frac{56}{7} \times 4 = 32 \text{ seniors}$$

$$\begin{aligned} \text{Total tickets sold} &= 231 + 105 + 56 + 12 \\ &= 404 \end{aligned}$$

$$\frac{32}{404} \times 100 = 7.920\% \text{ (2dp)}$$

Answer 7.92% (2dp)

Turn over for next question

16 Billy weighs 76 kg.

Billy claims that he weighs more than the mean weight of his friends.

The weight of his friends can be seen in the table below.

Friend	Weight (kg)
Kyle	75 kg
Chloe	70 kg
Katie	68 kg
Ari	80 kg
Sean	78 kg
Mark	76 kg

Is Billy correct?

Show your working.

[3 marks]

$$\text{Mean} = \frac{75 + 70 + 68 + 80 + 78 + 76}{6}$$

$$= 74.5 \text{ kg}$$

So yes, Billy is correct

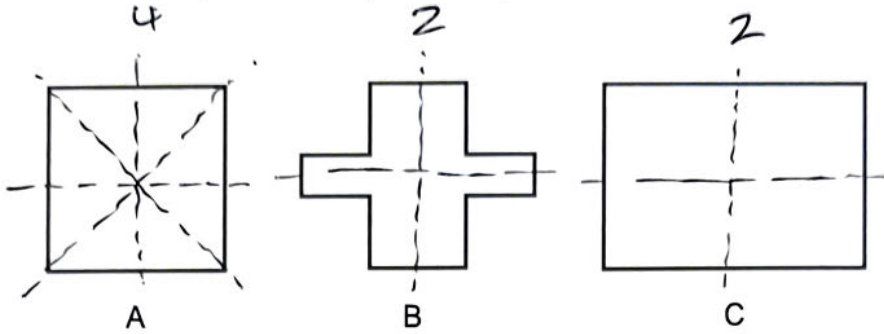
Answer

Yes.

Turn over for next question

17

Which of these shapes have exactly 2 lines of symmetry?



[2 marks]

Answer B and C

18

Monique eats $\frac{1}{4}$ of a pizza and Ahmed eats 28% of the same pizza.

Who eats the most pizza?

Show your working.

[2 marks]

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

So Ahmed eats the most pizza

Answer Ahmed

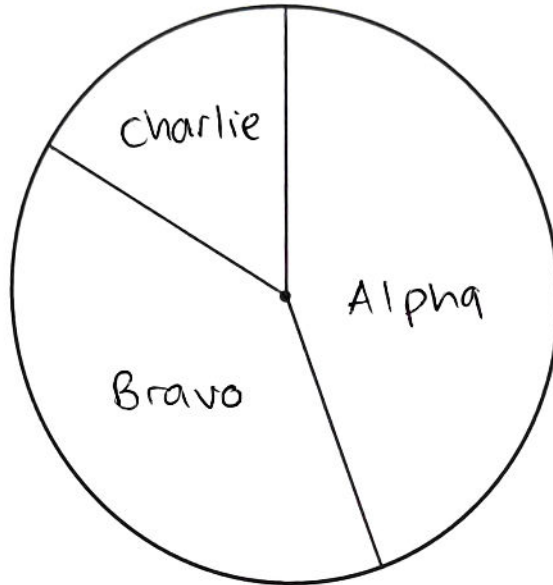
Turn over for next question

- 19 Some Army cadets are split up into 3 teams.
The table below shows these results.

Team	Cadets	Angle
Alpha	40	$\frac{40}{90} \times 360 = 160^\circ$
Bravo	35	$\frac{35}{90} \times 360 = 140^\circ$
Charlie	15	$\frac{15}{90} \times 360 = 60^\circ$

90

Complete the pie chart to display this data.



[3 marks]

$$40 + 35 + 15 = 90$$

$$\text{Alpha: } \frac{40}{90} \times 360 = 160^\circ$$

$$\text{Bravo: } \frac{35}{90} \times 360 = 140^\circ$$

$$\text{Charlie: } \frac{15}{90} \times 360 = 60^\circ$$

Answer _____

Turn over for next question

20

Mary uses the following mileage chart to see the distances between various cities.

Leicester			
52	Lincoln		
26	36	Nottingham	
61	47	37	Sheffield

Mary wants to drive from Sheffield to Nottingham, and then from Nottingham to Leicester. She has enough petrol in her car to travel 70 miles.

Does she have enough petrol to do these journeys?

Show your working.

[2 marks]

$$\text{Total distance} = 26 + 37 = 63 \text{ miles}$$

SO yes, she does have enough petrol

Answer

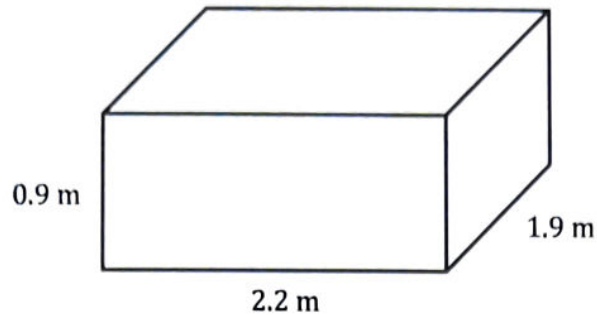
Yes

Turn over for next question

21

Wendy has bought a hot tub for her garden and wants to fill it with water.

A diagram of the hot tub can be seen below.



She is going to use a hose pipe that will fill the hot tub with 0.026 m^3 of water per minute.

Calculate how long it will take Wendy to fill the hot tub using this hose pipe.

Give your answer to the nearest minute.

[4 marks]

$$\text{Volume} = 0.9 \times 2.2 \times 1.9 = 3.762 \text{ m}^3$$

$$3.762 \div 0.026 = 144.69\ldots$$

$$= 145 \text{ minutes}$$

(nearest minute)

Answer

145 minutes.

Turn over for next question

22

Denise works at a Café and works as a cleaner. Her current working hours are listed in the table below.

Day	Job	Shift times	Breaks
Monday	Café	07:30 – 13:00	30 mins
Tuesday	Café	09:00 – 15:00	30 mins
Wednesday	Day Off		
Thursday	Cleaner	10:00 – 16:00	45 mins
Friday	Café	07:00 – 14:00	45 mins
Saturday	Day Off		
Sunday	Cleaner	11:30 – 14:30	-

Time worked

5 hours

5.5 hours

5.25 hours

6.25 hours

8.25 hours

Denise is not paid for her break times and she earns £9.10 per hour working at the Café. She earns 20% more per hour working as a cleaner.

If Denise works as a cleaner on a weekend, she gets paid an additional £20.

Work out how much Denise earns in a week.

[5 marks]

$$\text{Cafe hours worked} = 5 + 5.5 + 6.25 = 16.75 \text{ hours}$$

$$\text{Cleaner hours worked} = 5.25 + 3 = 8.25 \text{ hours}$$

$$\text{Cleaner wage} = £9.10 \times 1.20 = £10.92$$

$$\text{Cafe earnings} = 16.75 \times £9.10 = £152.425 \\ = £152.43$$

$$\text{Cleaner earnings} = 8.25 \times £10.92 + £20 \\ = £110.09$$

$$\text{Total earnings} = £152.43 + £110.09 \\ = £262.52$$

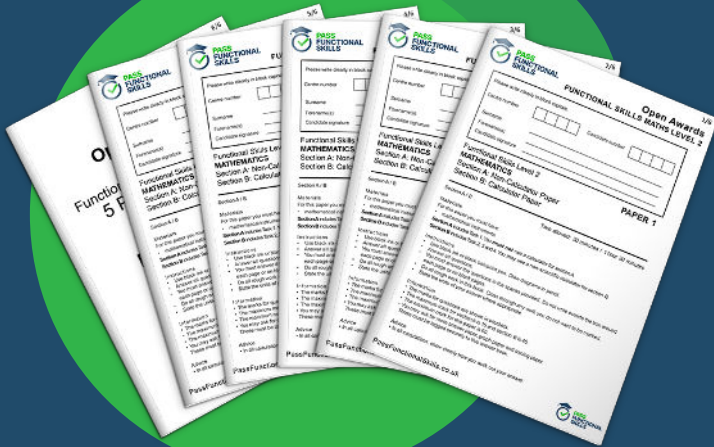
Answer £262.52

5

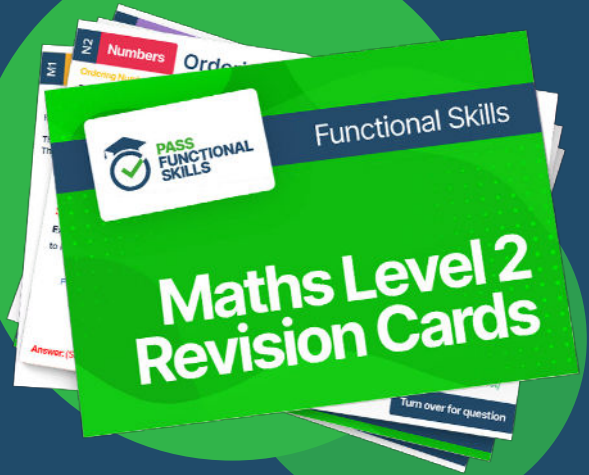
Turn over ►



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