

Homemade L1 Functional maths questions

Name _____ Date _____

You **must** show your working out in the boxes, even if you use a calculator.

1.



A boy lives at home with his multi-millionaire parents who named him Tarquin.

Whilst using his designer hair gel, Tarquin thought to himself that he wanted to buy a new cruise ship. He looked at how much it would cost, and because we are in the land of functional skills maths everything is not as it seems, for the boat's cost was £780.

Tarquin wanted to pay in cash. He only has 1p's. **He has to figure out how many 1p's he needs.**

Oh Tarquin...

Answer: _____ pennies

(2 marks)

2.

Tom has a 20 litre can of milk. He sells 14500 ml milk. **How much milk does he have left in litres?**

Answer: _____ litres

(2 marks)

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3.

David Bacon lives a stupidly massive house. He measures it from ground level to the top of the roof. It's 50 metres tall.

Mr Bacon wants to know what this is in centimetres, because we are in the land of functional skills maths...

Show how Mr Bacon can check his answer with a reverse calculation.

Check:

Answer: _____ cm

(3 marks)

4.

Approximately 20% of children in a class of 16 are wearing green jumpers.

How many children are not wearing green jumpers? What percentage is this?

Show how you can check your answers.



Check:

Answer: _____ children _____ %

(5 marks)

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5.

Kita is baking a cake.

a) She thinks she will need 400g flour to make a cake for 4 people.

Is she correct?

b) How much flour will she need to make a cake for 2 people?

c) How many eggs will she need for a cake for 6 people?

Cake recipe – serves 8 people

800g flour

600g butter

2 teaspoons baking powder

500g sugar 4 eggs

Answers: a) Is she correct YES / NO

b) _____ g flour

c) _____ eggs

(5 marks)

6.

Jonathon decides to go into town to do some shopping. He leaves at 10am. It takes him 5 minutes to get to the bus stop, half an hour on the bus to town and then two minutes to walk into the town centre. He shops for one hour.

a) How long has he been out for? b) Try to convert your answer to seconds. c) Check your answer to b).

Check:

Answers: a) _____ minutes

b) _____ seconds

(5 marks)

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9.

John, Felix and Anna all get a bonus at work. The bonus is £500 altogether.

Anna gets £200 and John and Felix split the rest equally between them.

a) What fraction of the total bonus do John and Felix get? b) How much do John and Felix get each?

Answers: a) John and Felix get _____ of the bonus between them. b) They receive £_____ each.

(5 marks)



10.

Felix writes an essay of 1500 words. His teacher says it should have 20% fewer words.

How many words should Felix delete? Check your answer.

Check:

Answer: _____ words

(3 marks)

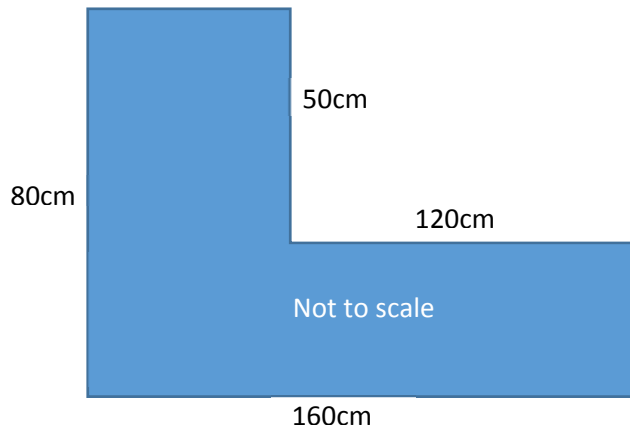
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11.

Joseph designs a special table. He wants to know the area and perimeter of his table.



Answer: Perimeter =

Area =

(4 marks)

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12.

Hannibal likes steak. To every 1 piece of steak there has to be 5 peas.

Tonight Hannibal is cooking for two friends so he cooks three steaks for tea.



How many peas does he need? Check your answer.

Check:

Answer: _____ peas

(3 marks)

13.

Hannah wants to buy some fish. Phil Fishman tells her that for every male fish there has to be 3 female fish.

Hannah wants to buy 20 fish. **How many males and how many females does she buy?**

Check your answer.

Check:

Answer: _____ males _____ females

(4 marks)

Level 1 Functional maths questions

Suggested solutions / hints / answers



	<i>Other methods / workings out / checks are possible. Check with your tutor.</i>	Marks		
		Show working out	Correct answer (s)	Successful check
1	100p = £1 1000p = £10 10,000p = £100 etc. $780 \times 100 = 78\,000\text{ p}$	1	1	
2	1 litre = 1000ml 20 l = 20 000 ml 20 000 - 14 500 = 6 500 ml Then divide 6 500 by 10 to convert to litres = 6.5 litres	1	1	
3	1 metre = 100 cm $50 \times 100 = 5\,000\text{ cm}$ Check: $5000 \div 100 = 50$	1	1	1
4	10% of 16 = 1.6, so 20% = $2 \times 1.6 = 3.2$ (approximates to 3 children). $16 - 3 = 13 / 100\% - 20\% = 80\%$ so 13 children (approx. 80%) are NOT wearing green jumpers. Various reverse checks are possible, e.g. $20 + 80 = 100$, $3.2 \div 2 = 1.6$, $13 + 3 = 16$.	2	2	1
5	Cake recipe serves 8 so halve the amounts for a smaller cake to serve 4 people. $800 \div 2 = 400\text{g}$ so yes Kita is correct . Halve the amount of flour again to find amount for 2 people (or divide original amount by 4). $400 \div 2 = 200\text{g}$ (or $800 \div 4 = 200$). 4 eggs are needed for 8 servings, so 1 egg is needed for 2 servings (divide both items by 4). 6 servings is three times as many as 2 servings, so multiply 1 egg x 3 to find number of eggs need for 6 servings = 3 eggs .	2	3	
6	$5\text{ min} + 30\text{ min} + 2\text{ min} + 60\text{ min} = 97\text{ minutes}$ (or 1 hour and 37 minutes). There are 60 seconds in a minute so multiply 97 by 60 to convert minutes to seconds. $97 \times 60 = 5820$ Check: $5820 \div 60 = 97$ (or $5820 \div 97 = 60$)	2	2	1
7	Perimeter: multiply by 10 to convert cm to mm. $150\text{mm} + 95\text{mm} + 150\text{mm} + 95\text{mm} = 490\text{mm}$. Check by adding up the numbers in a different order. Area: $15 \times 9.5 = 142.5\text{ cm}^2$ Check: $142.5 \div 9.5 = 15$	2	2	1
8	Convert all measures to the same units so multiply 1kg x 1000. Flour to chocolate to sugar is 1000: 500: 300 simplifies to 10:5:3 . $300\text{g} \div 9 = 33.33\text{ g}$ (rounds to 33g)	1	3	
9	Anna gets 200/500 simplifies to $2/5$ this leaves $3/5$ for John and Felix. $£500 - £200 = £300$. $£300 \div 2 = £150$ each for John and Felix.	2	3	
10	Divide 1500 by 10 to find 10% = 150 words. Double this to find 20% = $2 \times 150 = 300$ words. Check: $150 \times 10 = 1500$. $300 \div 2 = 150$	1	1	1
11	Calculate the missing dimensions. Perimeter = $80 + 40 + 50 + 120 + 30 + 160 = 480\text{ cm}$ Area: split the table into two rectangles, calculate the area of each and then add them together. E.g. $50\text{cm} \times 40\text{cm} = 2000\text{ cm}^2$ and $30\text{cm} \times 160\text{cm} = 4800\text{ cm}^2$ $2000\text{ cm}^2 + 4800\text{ cm}^2 = 6800\text{ cm}^2$ <i>Do not accept answers that are not accompanied by the correct units.</i>	2	2	
12	Ratio of steak to peas is 1:5 so for 3 steaks multiply both sides of the ratio by 3. $1 \times 3 = 3$ steaks. $5 \times 3 = 15$ peas. Check $15 \div 3 = 5$ (peas each)	1	1	1
13	Ratio of males to females is 1:3 ($1 + 3 = 4$ fish in total). Hannah wants five times as many fish as this (because $4 \times 5 = 20$) so multiply both sides of the ratio by 5. $1 \times 5 = 5$, $3 \times 5 = 15$. (5:15) which is 5 males and 15 females Check: $5 + 15 = 20$ fish.	1	2	1
	Totals			
	Total marks out of 50 = Suggested pass mark is 64% (32/50)			

Level 1 Functional maths questions

Curriculum mapping



Background and teaching notes

Performing Arts & Media students created these questions during their pre-exam revision sessions.

FUNCTIONAL MATHEMATICS Coverage and Range statements (indicative only)

Coverage and range statements provide an indication of the type of mathematical content candidates are expected to apply in functional contexts. Relevant content can also be drawn from equivalent National Curriculum levels and the Adult Numeracy standards.

Highlighting and ✓ indicates the main coverage and range skills covered in this resource, although these will vary with the student group and how the resource is used by the teacher.

Entry Level 3

- | | |
|--|---|
| a) add and subtract using three-digit numbers ✓ | g) recognise and describe number patterns |
| b) solve practical problems involving multiplication and division by 2, 3, 4, 5 and 10 ✓ | h) complete simple calculations involving money and measures ✓ |
| c) round to the nearest 10 or 100 | i) recognise and name simple 2D and 3D shapes and their properties |
| d) understand and use simple fractions | j) use metric units in everyday situations ✓ |
| e) understand, estimate, measure and compare length, capacity, weight and temperature ✓ | k) extract, use and compare information from lists, tables, simple charts and simple graphs |
| f) understand decimals to two decimal places in practical contexts ✓ | |

Level 1

- | | |
|--|--|
| a) Understand and use whole numbers and understand negative nos. in practical contexts ✓ | g) Solve problems requiring calculation, with common measures, including money, time, length, weight, capacity and temperature ✓ |
| b) Add, subtract, multiply and divide whole numbers using a range of strategies ✓ | h) Convert units of measure in the same system ✓ |
| c) Understand and use equivalences between common fractions, decimals and percentages ✓ | i) Work out areas and perimeters in practical situations ✓ |
| d) Add and subtract decimals up to two decimal places ✓ | j) Construct geometric diagrams, models and shapes |
| e) Solve simple problems involving ratio, where one number is a multiple of the other ✓ | k) Extract and interpret information from tables, diagrams, charts and graphs |
| f) Use simple formulae expressed in words for one- or two-step operations | l) Collect and record discrete data and organise and represent information in different ways |
| | m) Find mean and range |
| | n) Use data to assess the likelihood of an outcome |

References: Ofqual (2009), *Functional Skills criteria for Mathematics: Entry 1, Entry 2, Entry 3, level 1 and level 2.*

<https://www.gov.uk/government/publications/functional-skills-criteria-for-mathematics>

This resource also covers many **adult numeracy curriculum** elements.

<http://www.excellencegateway.org.uk/content/etf1075>