

Functional Skills Mathematics

Level 1 Sample assessment

Mark scheme

Guidance notes for Sample Paper Mark Schemes Level 1 and Level 2

Notes:

The mark scheme has been carefully constructed to avoid penalising candidates repeatedly for similar errors:

1) The principle of follow through applies throughout unless otherwise stated. This allows the candidates to gain credit for subsequent correct calculation based on a previous incorrect answer.

2) Units or numbers shown in brackets on the mark scheme are not required for the awarding of mark/s on the candidate's paper. However, if a candidate states units they must be correct:

eg 24(cm) means accept 24cm or 24 but not 24m

eg (£)72.5(0) means accept £72.50 or £72.5 or 72.50 or 72.5

3) Correct money format is expected in final answers unless otherwise indicated by brackets ie pounds must have two decimal places or no decimal places.

eg (£)5.00 or (£)5 not (£)5.0

eg (£)72.50 not (£)72.5

eg (£)37.43 not (£)37.432

4) URT means unrounded, rounded or truncated; the underlining defines the acceptable limit of approximation:

eg 860. 8652 URT (U is the unrounded version)

the following are acceptable: 860 (T) or 861 (R) 860.8 (T) or 860.9 (R) or 860.86 (T) or 860.87 (R) or 860.865 (R) or 860.8652 (U) but not eg 900.

Level 1 Sample 3

	mark	R	A	I	open	fixed					
1A	3	1	2	0	3	0					
1B	1	0	1	0	0	1					
1C	2	1	1	0	2	0					
1D	3	2	1	0	3	0					
1E	4	0	1	3	4	0					
1F	2	1	1	0	2	0	5	7	3	14	1
2A	2	1	1	0	2	0					
2B	2	0	0	2	0	2					
2C	3	2	1	0	3	0					
2D	6	1	1	4	6	0					
2E	2	1	1	0	2	0	5	4	6	13	2
3A	2	1	0	1	1	1					
3B	3	1	2	0	0	3					
3C	2	1	1	0	0	2					
3D	1	0	0	1	1	0					
3E	4	0	0	4	4	0					
3F	1	0	0	1	1	0	3	3	7	7	6
3G	2	1	1	0	2	0					
	45	14	15	16	36	9					
		31%	33%	36%	80%	20%					

Functional Mathematics Sample 3 -Task 1: Raffle			
Step	Total marks	Marks	Marks awarded for
1A	3	3	358 or 359 (tickets) accept whole number between 350 and 360
		2	358.6 or 32 or 33 (tickets)
		1	32.6 (tickets) or value from 326 + their incorrect 10%
1B	1	1	(£)895 or (£)897.50 or value for their number of tickets x (£)2.50
1C	2	2	(£)223.75 or (£)224.37 or (£)224.38 follow through 1A and 1B
		1	complete correct method with one calculation or rounding error
1D	3	3	combination of prizes fulfilling all conditions ie 1 expensive and 5 cheaper at least 4 different and in budget AND total cost eg 1 MP3 player, 1 watch, 2 DVD vouchers and 2 boxes of chocolates AND (£)223 follow through 1C
		2	as above but with one condition not met and correct corresponding total or correct combination meeting all conditions but no/wrong total cost
		1	as above but with two conditions not met and correct corresponding total or total cost of their choice of prizes
1E	4 no marks for chart or line graph	1	table with clear structure ie rows, columns, delineation AND some suitable headings/labels
		1	four headings/labels for number of tickets, income, cost of prizes and money left or equivalents
		1	all data entered for their headings in table note: at least three headings and corresponding data required for this mark ie number of tickets, income and cost of prizes
		1	value for money left follow through their values
1F	2 no marks for repeat calc	2	a complete correct check of any original calculation seen in 1A, 1B or 1C using a different method eg a reverse calculation OR a calculation using approximate values note: original calculation must be seen at 1A or 1B or 1C
		1	a correct check which is not finished
Total for Task 1			15 marks

Example for 1E

Number of tickets	358
Money from tickets	£895
Cost of prizes	£223
Money left	£672

Functional Mathematics Sample 3 – Task 2: Kitchen units			
Step	Total marks	Marks	Marks awarded for
2A	2	2	14(cm) for width AND 11(cm) for height OR equivalent with units eg 140mm AND 110mm
		1	14(cm) for width or 11(cm) for height or method for finding one dimension eg 3.75 x 4 or redefining the scale eg 1:25 or 1cm for 250mm accept 1cm = 250mm
2B	2	2	rectangle drawn to their dimensions in 2A with tolerance $\pm\frac{1}{2}$ small square
		1	two parallel sides drawn to scale $\pm\frac{1}{2}$ small square
2C	3	3	5 (base units)
		2	2500(mm) or equivalent seen or 5.4 (base units)
		1	3.5 – 0.8 or 350 – 80 or 3500 – 800 with or without units or 0.8m or 800mm with units seen as minimum space for freezer
2D	6	3	all rectangles for base units drawn to scale 4cm by 2cm with tolerance $\pm\frac{1}{2}$ small square AND all rectangles for wall units drawn to scale 3cm by 2cm $\pm\frac{1}{2}$ small square follow through 2B and 2C
		2	all rectangles for base units drawn to scale 4cm by 2cm with tolerance $\pm\frac{1}{2}$ small square or all rectangles for wall units drawn to scale 3cm by 2cm $\pm\frac{1}{2}$ small square or one rectangle for base unit and one rectangle for wall unit drawn to scale $\pm\frac{1}{2}$ small square
		1	one rectangle for base unit drawn to scale 4cm by 2cm $\pm\frac{1}{2}$ small square or one rectangle for wall unit drawn to scale 3cm by cm $\pm\frac{1}{2}$ small square
		1	base units drawn together with gap of at least 3.2cm $\pm\frac{1}{2}$ small square at one end
		1	wall units drawn directly above base units with a gap of 2cm $\pm\frac{1}{2}$ small square
		1	space for freezer labelled
2E	2	2	correct explanation of scale used in 2B or 2D with reference to scale AND length of scaled line AND actual length eg $350 \div 25 = 14$ eg 4 squares (20 small squares) = 1m AND 2.75m = 11 squares (55 small squares) eg 4 squares (20 small squares) = 1m AND 500mm = 2 squares (10 small squares)
		1	incomplete explanation of scale used ie a reference to given scale for length of line without completing the explanation eg 80cm = 4 squares or reference to actual length and scaled length eg 1m = 4 squares or 25cm = 1 square
Total for Task 2			15 marks

Functional Mathematics Sample 3 - Task 3: Telephone calls			
Step	Total marks	Marks	Marks awarded for
3A	2	1	50/50 chance
		1	suitable explanation eg 50/50 chance because the number of calls on target are the same as the number not on target
3B	3	3	4.6(min)
		2	5(min) or complete correct method with one calculation or rounding error
		1	÷ 30 or 138 for total time
3C	2	2	8(min)
		1	10 and 2 seen
3D	1	1	comment referring to the variation eg the waiting times were ‘more varied,’ ‘less consistent,’ or ‘more spread out’
3E	4 No marks for table, pie charts or line graph	1	bar chart with 6 bars for means AND bar or line showing target AND vertical axis label AND bar labels/key if title present this may be used to clarify or substitute vertical axis label <i>follow through from 3B and/or 3D</i>
		1	suitable continuous linear scale starting at (implied) zero going to 4.6(min) or their maximum mean
		2	height of all bars correct ± ½ small square
		1	one bar height correct ± ½ small square
3F	1	1	decision and valid reason eg ‘No because the mean (waiting) time was longer than 4 minutes for two of the hours’ accept comments with no clear decision that mention all the data eg ‘They met the target for 4 hours but not the 2 nd and last hours’ <i>follow through 3D</i>
3G	2	2	a complete correct check of any of their answers or any interim stage of Task 1 using a different method, eg a reverse calculation or a calculation using approximate values Note: original calculation must be seen at 3A or 3B
		1	a correct check which is not finished
Total for Task 3			15 marks

Example of chart for 3D



Level 1 Sample Paper 3

Coverage and Range (Technical Skills)	Task 1	Task 2	Task 3
C1.1 Understand and use whole numbers and understand negative numbers in practical contexts	✓	✓	✓
C1.2 Add, subtract, multiply and divide whole numbers using a range of strategies	✓	✓	✓
C1.3 Understand and use equivalences between common fractions, decimals and percentages	✓	✓	✓
C1.4 Add and subtract decimals up to 2 decimal places	✓		✓
C1.5 Solve problems involving ratio, where one number is a multiple of the other		✓	
C1.6 Use simple formulae expressed in words for 1- or 2-step operations			
C1.7 Solve problems requiring calculation, with common measures, including money, time, length, weight, capacity and temperature	✓	✓	✓
C1.8 Convert units of measure in the same system		✓	
C1.9 Work out areas and perimeters in practical situations			
C1.10 Construct geometric diagrams, models and shapes		✓	
C1.11 Extract and interpret information from tables, diagrams, charts, graphs	✓	✓	✓
C1.12 Collect and record discrete data and organise and represent information in different ways	✓	✓	✓
C1.13 Find mean and range			✓
C1.14 Use data to assess the likelihood of an outcome			✓