



LEVEL 2 FUNCTIONAL SKILLS QUALIFICATION IN MATHEMATICS

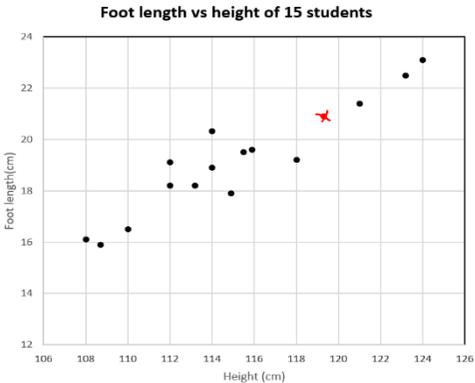
PRACTICE ASSESSMENT 2 (FSM209P)

MARK SCHEME

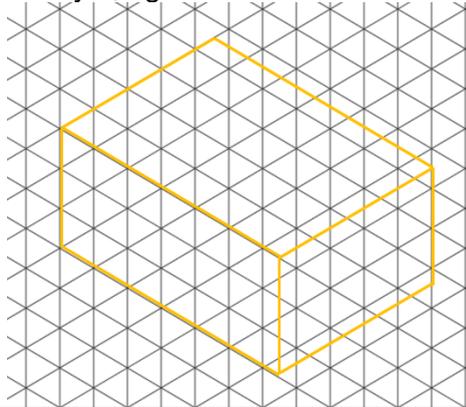
Section A	Process (Task description)	Total mark	Mark allocation	Comments	PS or US	Subject content
Question 1	Express one number as fraction of another	1	1 mark: Correct answer shown, ie $\frac{1}{8}$		US	8
Question 2	Method to calculate Pressure	2	1 mark: Method to calculate pressure, eg $8000 \div 25$	May be implied	US	15d
	Correct pressure calculated		1 mark: 320		US	15d
Question 3	Put fractions in order of size	1	1 mark: Correct order shown, ie $\frac{3}{7}$ $\frac{5}{9}$ $\frac{7}{10}$ $\frac{4}{5}$ $\frac{7}{3}$	Accept largest to smallest Accept use of mixed number	US	7a
Question 4	Correct number of red or purple pens out of total number of pens	2	1 mark: Probability of pen being red or purple, eg, $\frac{10}{16}$ or $\frac{5}{8}$, OR "10 out of 16"	Accept 0.625	US	27c
	Probability expressed as a percentage		1 mark: Probability expressed as a percentage, ie = 62.5(%)		US	27c
Question 5	Calculates scale from diagram	3	1 mark: Correctly calculates scale, eg $(9 \div 18) = 0.5\text{m per square}$ OR $(6.5 \div 13) = 0.5\text{m per square}$ OR 50cm per square OR 1m = 2 squares	May be seen on diagram	PS	18b
	Method to calculate one dimension		1 mark: Method to calculate at least one scale measurement, eg $3.9 \div 0.5 = (7.8 \text{ squares})$ OR $9 \div 0.5 = (9 \text{ squares})$ OR $0.75 \div 0.5 = (1.5 \text{ squares})$ OR Any other valid method	May be seen on diagram	PS	18b
	Correct diagram drawn of workshop		1 mark: Correctly draws workshop in appropriate position on plan, ie 9 squares by 7.8 squares at least 1.5 squares from	Allow tolerance +/-1mm Do not accept 8 squares for width	PS	18b

			edges.			
Question 6	Method to convert currency	3	1 mark: Method to convert £ to \$ or \$ to £, eg $260 \div 0.80 = (\$325)$ OR $310 \times 0.80 = (\pounds248)$	Award if (\$) 325 OR (£) 248 seen	PS	11b
	Correct conversion in \$ or £		1 mark: Correct converted cost of either phone, ie ($\$325$ OR ($\pounds248$		PS	11b
	Correct decision with reason		1 mark: Correct decision and reason, eg No because Rana's phone was equivalent to \$ 325 No, because the phone Rana's uncle found was £ 12 cheaper. Any valid reason with supporting calculations		PS	11b
Question 7	Method to calculate call charges	3	1 mark: Method to add all call charges, eg $0.195 + 0.074 + 0.126 + 0.030 + 0.210 + 0.814 + 0.123 = (1.572)$	Award if one error Award if 0.29 or 1.57 seen Accept alternative method $1.862 - 0.195 - 0.074 - 0.126 - 0.030 - 0.210 - 0.814 - 0.123 = (0.29)$	PS	10a
	Correct subtotal for call charges		1 mark: Correctly adds all values, ie 1.572	Award if 0.29 seen Accept 1.57	PS	10a
	Correct extra charge		1 mark: Correct extra charge), ie $(1.862 - 1.572) = 0.29$		PS	10b

Section B	Process (Task description)	Total mark	Mark allocation	Comments	PS or US	Subject content
Question 8	Method to express one amount as a percentage of another	2	1 mark: Method to calculate percentage of students who fail, eg $19 \div 463 \times 100 = (4.1\%)$ OR $100 \div 463 \times 19 = (4.1\%)$ OR Other valid method	Award for correct method for percentage of students who pass, $444 \div 463 \times 100$	US	5b
	Correct percentage of students who fail		1 mark: Correct percentage calculated, ie 4.1(%)	Accept 4%	US	5b
Question 9	Puts decimals in order of size	1	1 mark: Correct order shown, ie 2.112, 2.122, 2.962, 22.36, 22.8	Accept largest to smallest	US	9a
Question 10	Method to calculate median property rental income	5	1 mark: Method to calculate median, eg $10200 + 10500 \div 2 = (10350)$ OR Any other valid method		PS	23a
	Correct median property rental income		1 mark: Correct median calculated, ie (£)10350		PS	23a
	Correct yearly income calculated		1 mark: Correct calculation of yearly income, ie $(795 \times 12) = 9540$	Accept if calculates monthly income rate from median, ie $10350 \div 12 = 862.50$	PS	15c
	Method to calculate property rent as a % below median		1 mark: Method to calculate percentage difference, eg $(10350 - 9540) = 810 \div 10350 \times 100 = (7.826\dots)$	Accept if calculates percentage difference based on monthly values, eg $67.5 \div 862.5 \times 100 = 7.826\dots$ Allow FT for their median and yearly income	PS	6
	Correct % below median average calculated		1 mark: Correct percentage below median calculated, ie 7.8(%)	Accept 8%, 7.826...%	PS	6
Question 11	Correct interest for 1 year of saving	3	1 mark: Correct amount of interest for 1 year, ie $(0.024 \times 5000) = (£)120$	Award if 5242.88 seen May be implied	PS	13a

	Correct method to calculate compound interest at 2.4% per annum Correct total amount saved after 2 years		1 mark: Correct method to calculate compound interest, eg $(5000 + 120) \times 0.024 = (122.88)$ OR $5000 \times 1.024^2 = (5242.88)$	Award if 122.88 OR 5242.88 seen	PS	13a
			1 mark: Correct total amount saved, ie (£)5242.88		PS	13a
Question 12	Calculates figures for formula	4	1 mark: Correct amount borrowed, ie $(192300 - 61500) = 130800$		PS	2
	Substitutes figures into formula Correct LTV calculated		1 mark: Substitutes values into formula, ie $130800 \div 192300 \times 100 = (68.018\dots)$	Allow FT for incorrect loan amount	PS	3
	Correct decision		1 mark: Correct LTV calculated, ie 68.018%	Accept rounded or truncated answers	PS	3
			1 mark: Correct decision and reason, eg Yes, because the LTV is 7% below the limit	DO not accept "yes" without valid reason	PS	3
Question 13	Draw point in correct position on graph	1	1 mark: Point drawn correctly at 119.3,20.9 	Allow tolerance +/- 1mm	US	28a
Question 14	Correct multiplication of decimals	1	1 mark: Correct answer shown, ie 26.490165	Accept 26.49 or 26.5	US	10c
Question 15	Converts fraction into decimal	1	1 mark: Correct answer shown, ie 1.75		US	4

Question 16	Calculate frequency from given values	6	1 mark: Correct frequencies, ie 4, 6, 8, 1		PS	24
	Calculate midpoint		1 mark: Correct midpoint, ie 2, 7, 12, 17, 22, 27		PS	24
	Use correct method to calculate estimated total of grouped discrete data		1 mark: Method to find estimated total number of gym visits, ie $(6 \times 2) + (5 \times 7) + (4 \times 12) + (6 \times 17) + (8 \times 22) + (1 \times 27) = (400)$	Allow FT using their answers to mark point 1 and 2 Award if 400 seen	PS	24
	Correct total		1 mark: Correct estimated total number of gym visits, ie 400		PS	24
	Use correct method for calculating the estimated mean number of races entered		1 mark: Correct method for calculating the estimated mean number of gym visits $400 \div 30 = (13.33\dots)$	Allow FT	PS	24
	Correct estimated mean calculated		1 mark: Correct estimated mean number of gym visits, ie 13	Allow 13.33... Must have calculations to back up answer	PS	24
Question 17	Diameter to outside edge calculated	6	1 mark: Calculates total diameter, ie $(1.22 \times 12 + 73) = 87.64(\text{m})$		PS	16a
	Method to calculate perimeter of track		1 mark: Method to calculate distance around perimeter of track, eg $2 \times 84.39 + 3.142 \times 87.64 = (444.14488)$ $168.78 + 275.36488 = (444.14488)$	Allow FT for their diameter	PS	16a
	Correct perimeter calculated		1 mark: Correct perimeter calculated, ie 444.14488(m)	Allow truncated answers	PS	16a
	Method to calculate number of laps needed to run 1200m		1 mark: Method to calculate number of laps, eg $1200 \div 444.14 = (2.70\dots)$ OR Any other method	Accept $444.14 \times 3 = (1332.42)$ Allow FT for their perimeter	PS	16a

	Correct number of laps calculated					
	Correct decision and explanation		<p>1 mark: Correct number of laps around the perimeter, eg 2.7...</p> <p>1 mark: Yes, and valid explanation, eg Holly will complete 1332 m if she runs 3 times around the edge of the track. Holly only needs to do 2.7 times around the track to run 1200m.</p>	Allow correct distance in m for 3 x around the edge of the track, ie 1332(m) Do not allow FT	PS	16a
Question 18	Cuboid drawn correctly	2	<p>2 marks: Cuboid drawn with correct dimensions- 4.5 by 6.5 by 3, eg</p> 	Award 1 mark for two correct dimensions Allow tolerance +/-1mm Do not award for correct dimensions on a 2d shape	US	21a
Question 19	Correct calculation	1	1 mark: Correct percentage found, ie $(0.37 \times 108) = 39.96$		US	5a
Question 20	Use conversion chart to convert inch to mm	5	1 mark: Uses chart to convert inches into mm eg 190(mm)	May be implied Award for 189-191mm	PS	14a
	Method to calculate number of beads needed for each		1 mark: Method to calculate number of beads per bracelet, eg $190 \div 4 = (47.5)$ OR	Award if 47, 47.5 or 48 (beads) seen Allow FT	PS	14a

	bracelet		Any other valid method	May be implied by final answer		
	Correct number of beads per bracelet		1 mark: Correct number of beads needed, ie 48 Accept 47.	May be implied by final answer	PS	14a
	Method to calculate number of bracelets per pack		1 mark: Method to calculate number of bracelets, eg $800 \div 47 = (17.021\dots)$ OR $800 \div 48 = (16.666\dots)$	Allow FT	PS	14a
	Correct number of bracelets calculated		1 mark: Correct number of bracelets, ie $(800 \div 47) = 17$ bracelets OR $(800 \div 48) = 16$ bracelets	Do not accept decimal answer	PS	14a
Question 21	Method to calculate 18% discount	4	1 mark: Method to calculate discount, eg $0.18 \times 59.99 = (10.7982)$ OR $0.82 \times 59.99 = (49.1918)$ OR Any other valid method	Award if 10.7982 OR 49.1918 seen Award alternative method based on cost per bead, $59.99 / 800 = 0.074\dots$ $0.074 \times 0.82 =$ (£0.0614...)	PS	13b
	Correct discount calculated		1 mark: Correct cost including discount, ie $(59.99 - 10.7982) = (\pounds)49.19$	Award if 0.06, 6p seen	PS	13b
	Correct cost per bead calculated		1 mark: Correct cost per bead, ie $(49.19 \div 800) = 0.0614875$	Award for truncated answers	PS	13b
	Correct cost to nearest whole pence		1 mark: (£)0.06	Accept 6(p) Money notation not required	PS	9b
Question 22	Method to convert weight of parcel into kg/grams	3	1 mark: Method to convert lbs to kg or oz to grams eg $1 \div 2.2 = (0.454\dots)$ OR $2 \times 28.35\text{g} = (56.7\text{g})$ OR $18 \times 28.35 = (510.3\text{g})$	Award if 0.454, 56.7 or 455g seen	PS	14b
	Correct weight of parcel calculated		1 mark: Correct weight of parcel $(0.455 \times 1000 + 56.7) = 511.7\text{g}$	Accept 510.7, 506.7, 510.3	PS	14b

	Correct postage cost chosen		1 mark: Correct cost for postage choice of 750g parcel, second class, ie £2.33		PS	14b
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Annotation notes:

Annotation	Meaning
US	Underpinning skills
PS	Problem solving skills
FT	Follow through
(...)	Information that is not required for the mark point

Paper number	FSMO209 (Practice Set 2)					
Paper Section	Section A		Section B		Total	%
Total number of marks per task	15		45			
Problem Solving (PS) maximum marks	9		36		Total no of sub-elements mapped = 27	
Underpinning skills (US) maximum marks	6		9			
Tick the box to confirm that Section B contains at least three 5-8 mark questions: ✓✓✓						
Level 2 Subject Content	PS	US	PS	US		
1. Read and write order and compare positive and negative numbers of any size						
2. Carry out calculations with numbers up to one million including strategies to check answers including estimation and approximation			1(Q12)		1	
3. Evaluate expressions and make substitutions in given formulae in words and symbols			3(Q12)		3	
4. Identify the equivalence between fractions, decimals and percentages				1(Q15)	1	
5a. Work out percentages of amounts				1(Q19)	1	
5b. Express one amount as a percentage of another				2(Q8)	2	
6. Calculate percentage change (any size increase and decrease), and original value after percentage change			2(Q10)		2	
7a. Order and compare amounts or quantities using proper and improper fractions and mixed numbers		1(Q3)			1	
7b. Add amounts or quantities using proper and improper fractions and mixed numbers						
7c. Subtract amounts or quantities using proper and improper fractions and mixed numbers						
8. Express one number as a fraction of another		1(Q1)			1	
9a. Order and compare decimals				1(Q9)	1	
9b. Approximate decimals			1(Q22)		1	
10a. Add decimals up to three decimal places	2(Q7)				2	
10b. Subtract decimals up to three decimal places	1(Q7)				1	
10c. Multiply decimals up to three decimal places				1(Q14)	1	
10d. Divide decimals up to three decimal places						
11a. Calculate using ratios						
11b. Calculate using direct proportion	3(Q6)				3	
11c. Calculate using inverse proportion						
12. Follow the order of precedence of operators, including						

indices						
Total: Number and number system	PS	US	PS	US	21	
13a. Calculate compound interest			3(Q11)		3	
13b. Calculate percentage increases, decreases and discounts including tax and simple budgeting			3(Q21)		3	
14a. Convert between metric and imperial units of length, using i) a conversion factor ii) a conversion graph			5(Q20)		5	
14b. Convert between metric and imperial units of weight using i) a conversion factor ii) a conversion graph			3(Q22)		3	
14c. Convert between metric and imperial units of capacity using i) a conversion factor ii) a conversion graph						
15a. Calculate using compound measures including speed						
15b. Calculate using compound measures including density						
15c. Calculate using compound measures including rates of pay			1(Q10)		1	
15d. Calculate using compound measures excluding rates of pay		2(Q2)			2	
16a. Calculate perimeters including triangles and circles and composite shapes including non-rectangular shapes (formulae given except for triangles and circles)			6(Q17)		6	
16b. Calculate areas of 2-D shapes including triangles and circles and composite shapes including non-rectangular shapes (formulae given except for triangles and circles)						
17a. Use formulae to find volumes of 3-D shapes including cylinders (formulae to be given for 3-D shapes other than cylinders)						
17b. Use formulae to find surface areas of 3-D shapes including cylinders (formulae to be given for 3-D shapes other than cylinders)						
18a. Calculate actual dimensions from scale drawings						
18b. Create a scale diagram given actual measurements	3(Q5)				3	
19. Use coordinates in 2-D, positive and negative, to specify the positions of points						
20. Understand and use common 2-D representations of 3-D objects						
21. Draw 3-D shapes to include plans and elevations				2(Q18)	2	
22. Calculate values of angles and/or coordinates with 2-D and 3-D shapes						

Total: Measure, shape and space			2(Q10)		28	
23b. Calculate the mode of a set of quantities						
24. Estimate the mean of a grouped frequency distribution from discrete data			6(Q16)		6	
25. Use the mean, median, mode and range to compare two sets of data						
26. Work out the probability of combined events, including using diagrams and two-way tables						
27a. Express probabilities as fractions						
27b. Express probabilities as decimals						
27c. Express probabilities as percentages		2(Q4)			2	
28a. Draw scatter diagrams				1(Q13)	1	
28b. Interpret scatter diagrams						
28c. Recognise positive and negative correlation						
Total: Handling data					11	
Total Mark PS/US Total %	9	6	36	9	60	100

Problem solving and decision making requirements: Indicate the question numbers where this is required	Section A	Section B
Read, understand, and use mathematical information and mathematical terms	Q5, Q6, Q7	Q10, Q11, Q12, Q16, Q17, Q20, Q21, Q22
Address individual problems based on a combination of the knowledge and/or skills from the mathematical content areas (number and the number system; measures, shape and space; information and data). Some problems draw upon a combination of all three mathematical areas and require learners to make connections between those content areas.		Q10, Q21
Use mathematical information and terms in a problem	Q5, Q6, Q7	Q10, Q11, Q12, Q16, Q17, Q20, Q21, Q22
Use knowledge and understanding to a required level of accuracy	Q5, Q6, Q7	Q10, Q11, Q12, Q16, Q17, Q20, Q21, Q22
Identify suitable operations and calculations to generate results	Q5, Q6, Q7	Q10, Q11, Q12, Q16, Q17, Q20, Q21, Q22
Analyse and interpret answers in the context of the original problem	Q6	Q10, Q11, Q12, Q16, Q17, Q20, Q21, Q22
Check the sense and reasonableness of answers	Q5, Q6, Q7	Q10, Q11, Q12, Q16, Q17, Q20, Q21, Q22
Present and explain results clearly and accurately demonstrating reasoning to support the process and show consistency with the evidence presented.	Q6	Q12, Q17