



Functional Skills Mathematics Level 2 – Practice Mark Scheme

Paper: FSMO207

Section A	Process (Task description)	Total mark	Mark allocation	Comments	PS or US	Subject content
Question 1	Calculate size of missing angle	1	1 mark: Correct answer, ie $(180 - 150) = 30^\circ$		US	22
Question 2	Add decimals	1	1 mark: Correct answer, ie $(42.567 + 49.63) = 92.197$		US	10a
Question 3	Subtract decimals	1	1 mark: Correct answer, ie $(54.983 - 33.947) = 21.036$		US	10b
Question 4	Find mode of a set of data	1	1 mark: Correct mode, ie 61		US	23b
Question 5	Method to find median	2	1 mark: Valid method to find median, eg $52.7 + 43.9 = 96.6$ AND $96.6 \div 2 = (48.3)$		US	23a
	Completes calculation to find median		1 mark: Correct median, ie 48.3		US	23a
Question 6	Calculates income	5	1 mark: Method to calculate total income, ie $26346 + 32783 + 25256 + 67327 + 53893 = (205605)$	Award if calculations done in different order	PS	2
	Method to find expenses for 6 months		1 mark: Method to calculate 6 months expenses eg, $1467.26 \times 6 = (8803.56)$		PS	2
	Method to find total income after expenses		1 mark: Method to find total income minus expenses, eg $205605 - 8803.56 = (196,801.44)$		PS	2
	Correct amount raised in August		1 mark: Correct amount of income needed in August, eg $(250000 - 196801.44) = 53,198.56$ OR		PS	2



	Valid decision and reason		Correct total amount raised with 52000, eg (196801.11 + 52000) = 248,801.44			
			1 mark: Appropriate comment, eg No they need to raise more than £52000 as they will not reach their target. No they will only reach 248801.44 which is less than their target	Any valid reason which indicates need to raise more money. Only award f 53198.56 OR 248801.44 seen.	PS	2
Question 7	Correct total distance for Carmel	4	1 mark: Calculate distance for Carmel, ie $\frac{10}{3}$ OR $3\frac{1}{3}$		PS	7b
	Method to add fractions		1 mark: Valid method to add fractions and mixed numbers, eg $1\frac{3}{6} + 1\frac{1}{6} + 1\frac{1}{6} + \frac{2}{6} = (4\frac{1}{6})$ OR $\frac{9}{6} + \frac{7}{6} + \frac{7}{6} + \frac{2}{6} = (\frac{25}{6})$ Any other valid method		PS	7b
	Correct addition of fractions		1 mark: Correct total miles for Fiona, ie $4\frac{1}{6}$ OR $\frac{25}{6}$		PS	7b
	Correct number of miles left to walk		1 mark: Correct subtraction of fractions, ie (7 – 3 $\frac{1}{3}$) = 3 $\frac{2}{3}$ AND (7 – 4 $\frac{1}{6}$) = 2 $\frac{5}{6}$	Allow FT for their total distances	PS	7c



Section B	Process (Task description)	Total mark	Mark allocation	Comments	PS or US	Subject content
Question 8	Approximate decimal	1	1 mark: Correct answer, ie 24.93		US	9b
Question 9	Correct probability as a percentage	1	1 mark: Correct percentage, ie $(1 \div 6 \times 100) = 16.667\%$	Accept truncated or rounded figure % sign needed	US	27c
Question 10	Correct fraction	1	1 mark: Correct fraction in simplest form, ie $(25/350) = 1/14$		US	8
Question 11	Method to find number of staff per room	4	1 mark: Method to find number of staff needed for each room, eg $20 \div 2 = (10)$ OR $22 \div 4 = (5.5)$ OR $22 \div 8 = (2.75)$		PS	11a
	Correct number of staff		1 mark: Correct number of staff per room, ie 10, 6 AND 3	May be seen in calculations	PS	11a
	Method to find income		1 mark: Method to calculate income for 17 staff, eg $(16 + 22 + 22) \times 38.50 = (£2,310)$ OR $(20 + 22 + 8) \times 38.50 = (£1,925)$ OR Other valid combination	Any valid combination for 17 staff eg 9, 5 and 3 staff (£2310), 10, 4 and 3 staff (£2,233) 10, 5 and 2 staff (£2,156)	PS	11a
	Correct maximum income		1 mark: Correct maximum amount, ie £2310		PS	11a
Question 12	Method to calculate reverse percentage	2	1 mark: Method to calculate reverse %, eg. $29 \div 66 \times 100$ OR Any other valid method	Award if 44 or 43.93 seen	PS	6
	Correct number of children		1 mark: Correct number of children, ie 44	Do not award for decimal answer	PS	6
Question 13	Method to find number of ml per week OR per day	4	1 mark: Method to find number of ml/litres per week, ie $250 \times 37 \times 5 = (46,250\text{ml OR } 46.25 \text{ litres})$ OR Per day, ie $250 \times 37 = (9250\text{ml OR } 92.5\text{l})$		PS	14c



	Conversion of litres to pints		1 mark: Method to convert litres to pints, ie $46.25 \times 1.76 = (81.4 \text{ pints})$ OR $9.250 \times 1.76 = (16.28)$ OR $0.250 \times 1.76 = (0.44)$ Any other valid conversion		PS	14c
	Method to find number of cartons		1 mark: Method to find number of cartons, eg $(81.4 + 10) \div 4 = (22.85)$ per week OR $(16.28 + 2) \div 4 = (4.57)$ per day		PS	14c
	Correct increase in cost		1 mark: Correct increase in cost, ie $(23 \times 0.10) = (£)2.30$		PS	14c
Question 14	Correct number of overtime hours worked	3	1 mark: Correct calculation of overtime hours worked, ie $(42.25 - 35) = 7.25$ OR $7\frac{1}{4}$ hours OR 7 hours and 15 minutes		PS	15c
	Method to calculate total overtime pay.		1 mark: Method to calculate total overtime pay, eg $383.24 - (35 \times 8.58) = (82.94)$		PS	15c
	Correct overtime rate of pay per hour		1 mark: Correct overtime rate, ie $(82.94 \div 7.25) = (£)11.44$		PS	15c
	Process (Task description)	Total mark	Mark allocation	Comments	PS or US	Subject content
Question 15	Calculate missing length	3	1 mark: Correct height of triangle, ie $(57 - 24) = 33$ (cm)	Award if 1296 seen	US	16b
	Method to find area		1 mark: Method to calculate area of shape eg $(32 \times 24) + \frac{1}{2} (32 \times 33)$	Award if 1296 seen	US	16b
	Correct area of shape		1 mark: Correct area, ie $1,296 \text{ (cm}^2\text{)}$		US	16b
Question 16	Method for finding surface area of	7	1 mark: Method to find surface area, ie $3.142 \times 18.3 \times 32.3 = (1,857.204....)$	Award if 1857.204... seen	PS	17b



	sides		$2 \times 3.142 \times 9.15 \times 32.3 = (1857.204\dots)$			
	Correct surface area of side of vase		1 mark: Correct surface area, ie $1,857.204\dots(\text{cm}^2)$		PS	17b
	Method to find number of vases rejected		1 mark: Method to find 12.5%, eg $0.125 \times 600 (=75)$ OR Any other valid method	Award if 525 seen	PS	5a
	Correct total number of vases remaining		1 mark: Correct number of vases left, ie $(600 - 75) = 525$		PS	5a
	Method to find number of blue vases		1 mark: Method to find number of vases painted blue, eg $800000 \div 1857.204\dots = (430.754\dots)$		PS	17b
	Method to find probability		1 mark: Method to find probability of picking blue vase, ie $430/525$ OR $430 \div 525$	Allow FT for incorrect figures	PS	27b
	Correct probability		1 mark: Correct probability, ie 0.819.... OR 0.82	Do not award if answer shown as a fraction Accept 0.8	PS	27b
Question 17	Method to find number of lbs	4	1 mark: Correct number of lbs needed, eg $(6 \div 0.5) = 12$ lbs		PS	14b
	Use of conversion graph to convert lbs to kg		1 mark: Use of graph to find number of kg needed, ie 5.5kg	Allow FT for valid attempt for MP1	PS	14b
	Method to find cost of required number of kg		1 mark: Method to find cost of glaze, eg $5.5 \div 0.25 = 22 \times 9.86 = (\pounds 216.92)$ OR $5.5 \div 0.75 \approx 8 \times 24.96 = (\pounds 199.76)$ OR $5.5 \div 1 \approx 6 \times 33.98 = (\pounds 203.88)$		PS	11b
	Correct decision		1 mark: Cheapest pack size identified, ie. 0.75kg OR $\pounds 199.76$	Do not award unless all three costs calculated	PS	11b



	Process (Task description)	Total mark				
Question 18	Choose correct diagram	1	1 mark: Correctly identifies front elevation, ie C		US	20
Question 19	Correct substitution into formula	2	1 mark: Correct substitution into formula, ie $5(2.5 - 1.96)^2$		US	3
	Correct calculation		1 mark: Correct calculation, ie 1.458		US	3
Question 20	Method to find volume of ball	5	1 mark: Method to calculate volume of one ball, ie $4 \div 3 \times 3.142 \times 3.5^3 (=179.6176....\text{cm}^3)$ OR $4 \div 3 \times 3.142 \times 3^3 (=113.112\text{cm}^3)$		PS	17a
	Correct volume of both balls		1 mark: Correct volume of both balls, ie 179.6176....(cm ³) AND 113.112(cm ³)		PS	17a
	Method to calculate density		1 mark: Correct method to calculate density, ie $1.742 \div 179.6176..(=0.0097...)$ OR $1.040 \div 113.112 = (0.00919..)$	May use g or kg Allow FT for incorrect volume	PS	15b
	Correct density of both balls calculated		1 mark: Correct density of both balls, ie 0.00919 (kg/cm ³) OR 9.2 (g/cm ³) AND 0.0097...(kg/cm ³) OR 9.7 (g/cm ³)			15b
	Correct ball chosen		1 mark: Correct ball chosen, ie Ball B			15b
Question 21	Finds mean for A and B for comparison	4	1 mark: Correct mean for teams A and B, ie Team A $(405.15 \div 6) = 67.525$ Team B $(410.17 \div 6) = 68.36...$		PS	25
	Method to calculate medians for both teams		1 mark: Method to find median for teams A and B Team A- $67.01 + 69.00 = 136.01 \div 2 = (68.005)$ Team B- $67.21 + 68.21 = 135.45 \div 2 = (67.725)$		PS	25
	Correct median for A and B		1 mark: Correct median for teams A and B. Team A= 68.005 Team B = 67.725		PS	25



	Valid explanation given		1 mark: Compares averages and gives appropriate decision from calculations.eg Team A has the lowest mean but team B has the lowest median time so both are correct.		PS	25
Question 22	Method to find total original cost or amount of profit per tracksuit.	3	1 mark: Method to find amount to compare, eg $135 \div 20 = (£6.75)$ OR $15.98 \times 20 = (£319.60)$		PS	5b
	Method to find percentage		1 mark: Method to find percentage of original price, eg $6.75 \div 15.98 \times 100 = (42.240....\%)$ OR $135 \div 319.60 \times 100 = (42.240....\%)$		PS	5b
	Correct % profit		1 mark: Correct percentage, ie 42.24%	Accept 42 or 43%	PS	5b

Annotation notes:

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