

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		<p>Correct total amount raised with 52000, eg $(196801.11 + 52000) = 248,801.44$</p> <p>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</p>	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	<p>1 mark: Calculate distance for Carmel, ie $\frac{10}{3}$ OR $3\frac{1}{3}$</p>		PS	7b
	Method to add fractions		<p>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</p>		PS	7b
	Correct addition of fractions		<p>1 mark: Correct total miles for Fiona, ie $4\frac{1}{6}$ OR $\frac{25}{6}$</p>		PS	7b
	Correct number of miles left to walk		<p>1 mark: Correct subtraction of fractions, ie $(7 - 3\frac{1}{3}) = 3\frac{2}{3}$ AND $(7 - 4\frac{1}{6}) = 2\frac{5}{6}$</p>	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 $(57 - 24) = 33 \text{ (cm)}$	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 $4 \div 3 \times 3.142 \times 3.5^3 (=179.6176....cm^3)$ OR $4 \div 3 \times 3.142 \times 3^3 (=113.112cm^3)$		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