

**Functional Skills Mathematics Level 2 – Practice Mark Scheme**
**Practice Paper FSMO290**

Task 1	Process (Task description)	Total mark	Mark allocation	Comments	PS or US	Subject content
<b>Question 1</b>	Correct addition of fractions	2	<b>1 mark:</b> Correct addition of two or more fractions or mixed numbers, eg $1\frac{1}{2} + \frac{3}{4} = 2\frac{1}{4}$		US	7b
	Correct mileage		<b>1 mark:</b> Calculate total mileage ie $4\frac{1}{6}$ miles	Accept 4.16, 4.17	US	7b
<b>Question 2</b>	Correct order	1	<b>1 mark:</b> $\frac{3}{8}, \frac{5}{8}, \frac{3}{4}, \frac{7}{6}, \frac{4}{3}$	Do not accept largest to smallest. Accept $1\frac{1}{6}$ and $1\frac{1}{3}$ .	US	7a
<b>Question 3</b>	Correct division	1	<b>1 mark:</b> $273696 \div 24 = 11404$		US	2
<b>Question 4</b>	Use formula to calculate surface area	2	<b>1 mark:</b> $15 \times 15 = (225)$ $225 \times 6 = (1350)$		US	17b
	Correct answer with units		<b>1 mark:</b> $1350\text{cm}^2$	Must show units	US	17b
<b>Question 5</b>	Use scale accurately	2	<b>1 mark:</b> Valid method to calculate length, eg $7.5 \times 1500 = (11250)$ OR $1.5 \times 7.5 = (11.25)$ OR Other valid method	May be implied if 11.25 seen	PS	18a
	Correct length in metres		<b>1 mark:</b> correct length shown ie 11.25 (m)	Units not required	PS	18a
<b>Question 6</b>	Method to find area of patio	3	<b>2 marks:</b> Valid method to find the area of the trapezium eg $\frac{1}{2} (8.4 + 6.6) \times 4 = (30)$ OR $(8.4 \times 4) - (\frac{1}{2} \times 1.8 \times 4)$ OR $(6.6 \times 4) + (\frac{1}{2} \times 1.8 \times 4)$ OR Other valid method	Award 1 mark for correct area of triangle, $3.6\text{m}^2$	PS	16b
	Correct area of patio		<b>1 mark:</b> Overall area of patio, ie $30\text{m}^2$	Units required	PS	16b
<b>Question 7</b>	Calculate amount of dry mixture	4	<b>1 mark:</b> Calculate total amount of dry mixture required, eg	Allow FT for their area.	PS	11a

<p>Understanding of ratio shown</p> <p>Method to calculate number of bags of cement</p> <p>Correct number of bags of cement</p>	$30 \times 20\text{kg} = 600\text{kg}.$			
	<p><b>1 mark:</b> Evidence of understanding of correct use of ratio, eg 1 in 6 OR <math>1/6^{\text{th}}</math> OR 6 parts seen OR <math>20/6</math> OR other valid calculations of ratio.</p>	<p>Award if 3.33 seen Award if 100 seen</p>	PS	11a
	<p><b>1 mark:</b> Method to calculate no of bags of cement, eg <math>(600 \times 1/6) \div 25</math> OR <math>600 \div 6 \div 25</math> OR <math>3.33 \times 30</math> AND <math>99.99 \div 125</math> OR equivalent valid calculation.</p>	<p>Allow FT for their amount of dry mix.</p>	PS	11a
	<p><b>1 mark:</b> Correct answer, ie 4 bags.</p>	<p>Allow FT for their amount of dry mix</p>	PS	11a

Task 2	Process (Task description)	Total mark	Mark allocation	Comments	PS or US	Subject content
<b>Question 8</b>	Calculate total budget for house	5	<b>1 mark:</b> $((28\ 145 \times 3.5) + 4\ 875) = (£)103\ 382.50$	Accept 103 382.5	PS	2
	Method to convert distance		<b>1 mark:</b> $0.6\ (m) \times 1.6 = (0.96\ km)$	Accept any valid method to convert distance from miles to km  Implied if 0.96 seen	PS	14a
	Interpret scatter graph		<b>1 mark:</b> Identify cost of available house at required distance from station =	Allow between 105 000 and 107 000  Award mark if implied by explanation.	PS	28b
	Correct final answer and reason		<b>1 mark:</b> No (with valid calculations)  <b>1 mark:</b> for valid reason, eg because he needs £105 000 but he can only afford £103 382.50	Accept second mark for reason on FT if a correct reason is given based on their calculations.	PS	28b
<b>Question 9</b>	Find the mode	1	<b>1 mark:</b> Correct mode, ie 11		US	23b
<b>Question 10</b>	List in order of size	2	<b>1 mark:</b> Correct order ie: 9 9.5 10 10.5 11 12 15 23		US	23a
	Correct median		<b>1 mark:</b> Correct median, ie 10.75.		US	23a
<b>Question 11</b>	Calculate time taken to walk	2	<b>1 mark:</b> Correct calculation of the time to walk to the station, eg $2\ miles\ at\ 3mph = 2 \div 3 \times 60 = 40\ mins$	Accept 0.66 hours.	PS	15a
	Correct time for leaving house		<b>1 mark:</b> Correct time to leave home, ie 9.22(am)		PS	15a
<b>Question 12</b>	Method to calculate compound interest	5	<b>1 mark:</b> Correct calculation of interest 1.75% of £8500 eg $0.0175 \times 8500 = (£)148.75$ for Money Saver	Award if 8648.75 or 8954.10 seen	PS	13a

	Correct interest after 3 years for Money Saver		<b>2 marks:</b> Correct calculation for compound interest used to find Money Saver balance after 3 years, eg Correct amount after 1 year ie $8500 + 148.75 = (£)8648.75$ then Correct amount after 2 years ie $8648.75 + 151.35 = (£)8800.10$ then Correct amount after 3 years ie $8800.10 + 154.00 = (£)8954.10$	Award 1 mark for correct balance of Money Saver account after 2 years.  Award 2 marks if 8954.10 seen.  Award 1 mark for correct method.  Allow FT for their interest. Units not required.	PS	13a
	Correct interest for Bonus Saver		<b>1 mark:</b> Correct answer for Bonus Saver ie (£)8946.25	Units not required	PS	13b
	Difference in total balances		<b>1 mark:</b> £7.85		PS	13a
<b>Task 3</b>	<b>Process (Task description)</b>	<b>Total mark</b>	<b>Mark allocation</b>	<b>Comments</b>	<b>PS or US</b>	<b>Subject content</b>
<b>Question 13</b>	Correct substitution	3	<b>1 mark:</b> Correct substitution into formula.		US	3
	Correct answer to part in brackets		<b>1 mark:</b> 0.2 OR 1/5 OR 1/25 seen.	May be implied if 4 seen	US	12
	Correct % given		<b>1 mark:</b> 4	% sign not required	US	12
<b>Question 14</b>	Method to calculate sun hours in 2017	3	<b>1 mark:</b> Valid method to calculate 2017 sun hours from the given mean, eg $94.5 \times 12$ months = 1134	May be implied if 31 seen.	PS	25
	Find total sun hours except Dec 2017		<b>1 mark:</b> Add $47 + 61 + 119 + 128 + 214 + 108 + 144 + 126 + 94 + 56 + 6 (= 1103)$	May be implied if 31 seen.	PS	25
	Subtraction		<b>1 mark:</b> $1134 - 1103 = 31$ OR Other valid calculation method AND 'Yes, Raheema is correct'	Do <b>not</b> award if 31 not seen.	PS	25
<b>Question 15</b>	Correct year identified by comparing ranges	1	<b>1 mark:</b> 2017 Eg $206 - 21 = 185$ AND $214 - 6 = 208$	Do <b>not</b> award if no supporting calculations of range.	PS	25

<b>Question 16</b>	Correct kWh calculated	3	<b>1 mark:</b> Correct number of kWh ie. $1.225 \div 1.09 = 1.123853211009174$	Award for rounding to 2 or 3 dp, ie 1.12 OR 1.124	PS	10d
	Correct kWh per month		<b>1 mark:</b> Correct number of kWh in June, ie $1.123853211009174 \times 108 = 121.376146789$	Allow FT from their number of kWh Allow FT for rounded figures, eg $1.124 \times 108 = 121.392$ $1.12 \times 108 = 120.96$	PS	10c
	Correct cost of electricity		<b>1 mark:</b> Correct cost of electricity, ie $121.376146789 \times 0.143 = (\pounds)17.35$ OR $\pounds 17.36$	Allow FT for rounded figures to 2 or 3 dp, eg $120.96 \times 0.143 = (\pounds)17.29$ OR 17.30 $121.392 \times 0.143 = (\pounds)17.36$ $121.4 \times 0.143 = 17.36$  Allow for rounding.  Do not award for more or less than 2 dp.	PS	10c

<b>Question 17</b>	Method to calculate volume	5	<b>1 mark:</b> Valid method $3.14 \times 0.4 \times 0.4 \times 1 = (0.5024)$	Must be consistent units. Do <b>not</b> award for use of diameter.	PS	17a
	Correct volume		<b>1 mark:</b> Correct answer = 0.5024  Accept 0.502 – 0.503  <i>Can use range of 3.14 to 3.142 for pi.</i>	May be implied if 0.5024 seen.	PS	17a
	Method to convert volume to gallons		<b>1 mark:</b> Method to convert volume to gallons, eg = $0.5024 \times 219.97$	Allow FT for their volume. May be implied if 110.51 gallons seen.	PS	14c
	Correct number of gallons		<b>1 mark:</b> Correct number of gallons = 110.51 (gallons)		PS	14c
	Valid explanation given		<b>1 mark:</b> Valid explanation, eg “Yes, she is correct, the container will hold more than 100 gallons”.	Accept other valid answers. Do not accept ‘yes’ without supporting calculations.  Allow FT for incorrect volume or number of gallons.	PS	17a
<b>Task 4</b>	<b>Process (Task description)</b>	<b>Total mark</b>	<b>Mark allocation</b>	<b>Comments</b>	<b>PS or US</b>	<b>Subject content</b>
<b>Question 18</b>	Plot coordinate on grid	1	<b>1 mark:</b> Point plotted correctly on graph		US	19
<b>Question 19</b>	Calculate the decimal	2	<b>1 mark:</b> correct calculation of decimal, ie $(144 \div 240 = 0.6)$ converted to $6/10$		US	8
	Convert to fraction in simplest form		<b>1 mark:</b> $3/5$		US	8

<b>Question 20</b>	Correct entry fees and percentage	4	<b>1 mark:</b> Complete entry fees in table, ie £300 and 25%	May be implied if 1200 or 228 or 384 or 108 or 180 seen.	PS	11b	
	Calculate the ratio		<b>1 mark:</b> Find appropriate ratio, ie £:% as 300:25 OR 12:1 or $300 \times 4$ .	May be implied if 1200 or 228 or 384 or 108 or 180 seen.	PS	11b	
	Calculate total income		<b>1 mark:</b> Find total income, ie (£) 1200.	Units not required.	PS	11b	
	Calculate total profit		<b>1 mark:</b> Calculate total profit, ie $1200 - 175 - 85 = (£) 940$	Allow FT using their total income figure. Units not required.	PS	11b	
<b>Question 21</b>	Correct circumference	5	<b>1 mark:</b> Correct circumference of a cake, eg $2 \times 80 \times 3.14 = 502.4\text{mm}$ , accept 502 - 503mm	May be implied if 502-503 seen. May use metres or cm eg 8cm or 0.08m	PS	16a	
	Correct ribbon length for 15 cakes		<b>1 mark:</b> Calculate ribbon length for 15 cakes, ie $502.4 \times 15 = 7536\text{mm}$	Alt method 12.5% first then $\times 15$	PS	16a	
	Calculate extra 12.5%		<b>1 mark:</b> Calculate 112.5%, eg $7536 \times 1.125$ OR equivalent = 8478(mm) Accept 8475 – 8481(mm).	Award if correct answer seen	PS	6	
	Rounded length		<b>1 mark:</b> 9(m) required	Units not required.	PS	6	
	Calculate cost				Award if correct answer seen		
				<b>1 mark:</b> correct calculation of cost, eg $9(\text{m}) \times £4.95 = £44.55$		PS	6

<b>Question 22</b>	Probability of winning a prize and of spin made by a girl	3	<b>1 mark:</b> Correct probability of a spin winning a prize given, eg $\frac{1}{3}$ OR $\frac{4}{12}$ <b>AND</b> Correct probability of a spin being made by a girl, ie $\frac{1}{2}$ or 0.5	May be implied if $\frac{1}{6}$ <sup>th</sup> seen.	PS	27a
	Method to calculate probability of 2 events		<b>1 mark:</b> Method to calculate probability of a person being a girl and winning a prize, ie $\frac{1}{3} \times \frac{1}{2} =$ OR $0.5 \times 0.33 =$	Allow FT for their two individual probabilities. May be implied if $\frac{1}{6}$ <sup>th</sup> seen.	PS	26
	Correct probability of 2 events		<b>1 mark -</b> Correct probability of 2 events, ie $\frac{1}{6}$ OR 0.166 OR 16.6%	Allow FT for their two individual probabilities.	PS	26

**Annotation notes:**

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