

Highfield Functional Skills Qualification in Mathematics at Level 2

PAPERCODE: FSQC211P

Question	Total marks	Subject content	Process	Marker annotation	Accepted answer AFT = allow follow through CAO = correct answer only	
1 (Q7 On-screen)	1	5	Calculate 13% percentage of the amount given	1CA	CAO (£)33.15	
2 (Q8 On-screen)	2	5	Method to calculate percent	1a	CAO $198 \div 230$	
		5	Correct answer	1b	CAO 86.08695(%) accept correct rounding e.g. 86.09(%)	
3 (Q9 On-screen)	1	2	Use a suitable strategy to check the answer to Q2	1CA	CAO Suitable checking strategy used and accurately applied E.g. $230 \div 100 \times 86.09 = 198(.007)$	
4 (Q10 On-screen)	2	3	Uses the correct method to calculate	1a	CAO $0.5 \times 25 + 5$	
		3	Finds the correct answer	1b	CAO 17.5	
5 (Q11 On-screen)	2			2CA	CAO 11 (lb)	
		<b>If the answer is incorrect revert to:</b>				
		14	Convert 5000 grams to kilograms	1a	CAO $5000 \div 1000 = 5$	
	14	Convert kilograms to pounds	1b	AFT $(5) \times 2.2 = (11)$		
6 (Q12 On-screen)	1	2	Use a suitable strategy to check the answer to previous question	1a	CAO Suitable checking strategy used and accurately applied E.g. $11 \div 2.2 = 5$ $5 \times 1000 = 5000$	

<b>7</b> (Q13 On-screen)	<b>1</b>	<b>12</b>	Follow the order of precedence to find value of x when $x = 15 + 84^2 \div 3$	<b>1CA</b>	<b>CAO</b> <b>2367</b>	
<b>8</b> (Q14 On-screen)	<b>2</b>			<b>2CA</b>	<b>CAO</b> <b><math>3\frac{5}{16}</math></b>	
		<b>If the answer is incorrect revert to:</b>				<b>Alternative method:</b>
		<b>7</b>	Convert the mixed fraction into an improper fraction	<b>1a</b>	CAO $\frac{21}{8}$ or $\frac{42}{16}$	CAO $5 \times 2 = 10$ $8 \times 2 = 16$
		<b>7</b>	Add the improper fractions	<b>1b</b>	AFT $(\frac{42}{16}) + \frac{11}{16} = (3\frac{5}{16})$	AFT $\frac{11}{16} + \frac{10}{16} = 1\frac{5}{16} (+2)$
<b>9</b> (Q15 On-screen)	<b>2</b>			<b>2CA</b>	<b>CAO</b> <b><math>\frac{3}{8}</math></b>	
		<b>If the answer is incorrect revert to:</b>				
		<b>8</b>	Express 36 out of 96 as a fraction	<b>1a</b>	CAO $\frac{36}{96}$	
		<b>8</b>	Simplify their identified fraction	<b>1b</b>	AFT Correct simplification of their fraction E.g. $\div 6 = \frac{6}{16} \div 2 = \frac{3}{8}$	

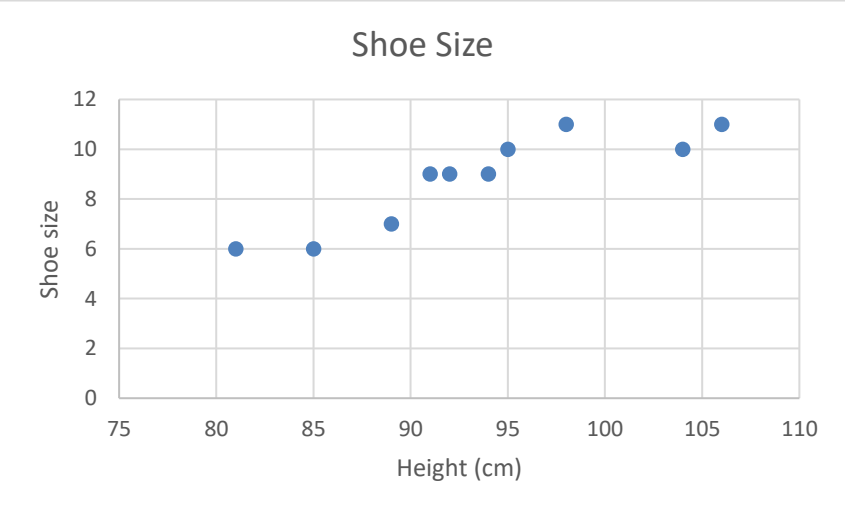
10 (Q16 On-screen)	5			5CA	CAO No and 40-44						
		If the answer is incorrect revert to:									
		24	Find the mid-point ( $m$ ) of each interval	1a	CAO						
						Diameter	35-39	40-44	45-49	50-54	55-59
						Mid-point ( $m$ )	37	42	47	52	57
		24	Multiply ( $m$ ) with the frequency ( $f$ ) for each grouped size of pipe	1b	AFT						
						Diameter	35-39	40-44	45-49	50-54	55-59
				Frequency ( $f$ )	8	10	13	3	1		
				Mid-point ( $m$ )	37	42	47	52	57		
				$(m) \times (f)$	296	420	611	156	57		
24	Add the totals from mark 1b	1c	AFT $(296) + (420) + (611) + (156) + (57) = (1540)$ o/e								
24	Method for dividing their total from mark 1c by the total sum of the frequency	1d	AFT $(1540) \div (8 + 10 + 13 + 3 + 1) = (44)$ o/e								
2	Correct decision with accurate figure	1e	No and e.g. "mean is in group 40-44"								

11 (Q17 On-screen)	6		6CA	CAO (£)2016		
		If the answer is incorrect revert to:				Alternative method:
		2	Calculate the total hours over 42 days OR Calculate the daily wage total over 42 days	1a	CAO (hours) $(6 \times 8) \times 42 = 2016$ OR CAO (daily wage) $(6 \times 8) \times 12 = (576)$	Calculates additional 'days' of work $42 - 35 = 7$
		2	Calculate the correct total wages for 42 days	1b	AFT $(2016) \times 12 = (£24,192)$ OR $(576) \times 42 = (£24,192)$	Adds this to original number of hours worked per day 8 OR $7 \times 8 = 56$
		2	Calculate the number of hours available in 35 days	1c	CAO $(35 \times 8) \times 6 = 1680$	Calculates additional cost per hour $£18 - £12 = £6$
		1	Calculate number of overtime hours required	1d	AFT $(2016) - (1680) = 336$	Uses correct number of builders 6
		2	Work out the correct total wages for 35 days	1e	AFT $(1680) \times 12 = 20,160$ $336 \times 18 = 6,048$ $20,160 + 6048 = 26, 208$	Uses correct method to calculate total $7 \times 8 \times 6 \times £6$ OR $56 \times 6 \times £6$
		1	Work out the difference in cost between 35 days and 42 days	1f	AFT $(26, 208) - (24, 192) = (£)2016$ <i>When '2016' is seen, ensure this is not the figure of total hours in 42 days and the above calculation has been completed</i>	

12 (Q18 On-screen)	5			5CA	CAO Deluxe	
		If the answer is incorrect revert to:				Alternative method:
		18	Interpret scale to work out correct dimensions and volume of living room (as a rectangle)	1a	CAO $5.5\text{m} \times 4\text{m} \times 2.2\text{m} = 48.4\text{m}^3$	
		17	Uses appropriate method to 'remove' triangle from corner	1b	CAO $1\text{m} \times 1\text{m} \times 2.2\text{m} = 2.2\text{m}^3 \div 2 = 1.1\text{m}^3$	
		17	Finds correct volume of living room	1c	AFT $48.4 - 1.1 = 47.3\text{m}^3$	
		14	Converts heater capacities from cubic feet to cubic meters	1d	CAO $1765 \div 35.3 = 50$ $2400 \div 35.3 = 67.99$  $1050 \div 35.3 = 29.75$ $1750 \div 35.3 = 49.58$  $880 \div 35.3 = 24.92$ $1590 \div 35.3 = 45.04$	CAO Converts volume of room into cubic feet $47.3 \times 35.3 = 1669.69$
14	Recommend a suitable heater for the volume of the room	1e	CAO Deluxe			

<b>13</b> <b>(Q19 On-screen)</b>	<b>6</b>			<b>6CA</b>	<b>CAO</b> <b>(£)265,284 – (£)265,300</b>
		<b>25</b>	Finds mean of 2005 prices	<b>1a</b>	CAO $(54050 + 72000 + 68000 + 49000 + 56500 + 49900 + 73250 + 63500) \div 8$ OR $(486200) \div 8$ $= (£)60, 775$
		<b>25</b>	Finds mean of 2015 prices	<b>1b</b>	CAO $132000 + 105500 + 98500 + 143000 + 110250 + 172600 = 761850 \div 6$ $= (£)126,975$
		<b>13</b>	Method for % increase from 2005 to 2015	<b>1c</b>	AFT $(126,975 - 60,775) \div (60, 775)$
		<b>13</b>	Finds correct %	<b>1d</b>	AFT $= 1.089263677498972$
		<b>6</b>	Method for % increase to find their 2025 price	<b>1e</b>	AFT $((126,975) \times (1. 089263677498972)) + (126, 975)$
		<b>6</b>	Finds correct answer	<b>1f</b>	$= (£)265,284$ OR Rounds to (£)265,300 <i>Allow any figure within the range of 265,284 to 265300</i>
<b>14a</b> <b>(Q20 On-screen)</b>	<b>6</b>	<b>18</b>	Method for calculating length and width for 54m <sup>2</sup> using space available	<b>1a</b>	<b>CAO</b> <b>54 ÷ 10 = 5.4 or</b> <b>54 ÷ 9 = 6 or</b> <b>54 ÷ 8 = 6.75 or</b> <b>54 ÷ 7 = 7.714 or</b> <b>54 ÷ 6 = 9 or</b>
		<b>18</b>	Create outline of the play area on the grid with correct scale	<b>1b</b>	CAO Draws plan on grid that represents 54m <sup>2</sup>
<b>14b</b> <b>(Q20 On-screen)</b>	<b>6</b>	<b>18</b>	Draw see-saw to scale (measuring 2.4m x 0.5m)	<b>1c</b>	CAO See-saw is drawn to scale
		<b>18</b>	Draw climbing frame to scale (measuring 2m x 3m)	<b>1d</b>	CAO Climbing frame is drawn to scale
		<b>18</b>	Draw sand pit to scale (measuring 1.8m x 3m)	<b>1e</b>	CAO Sand pit is drawn to scale
		<b>18</b>	Leave a 1m (to scale) gap around the edge of the equipment	<b>1f</b>	CAO All equipment is drawn with 1m (to scale) clearance around it

15 (Q21 On-screen)	5		5CA	<b>CAO</b> <i>Must be supported by mathematical reasoning (if not given, revert to steps below)</i> <b>Blue with supporting reason (i.e. It is £4.62 under budget/It is £2.92 cheaper than the Green sandpit which is also within budget)</b> <b>OR</b> <b>Green with supporting reason (i.e. it is £1.70 below budget/ Even though it is more expensive than the Blue sandpit it is worth spending £2.92 more to get a free cover)</b>	
		<b>If the answer is incorrect revert to:</b>			
		3	Use formula to correctly calculate delivery and set up cost of 1 sandpit	1a	<b>CAO</b> Blue $((0.45 \times 25) + (0.8 \times 28)) \times 1.2 = £40.38$ Green $((0.45 \times 25) + (0.8 \times 30)) \times 1.2 = £42.30$ Red $((0.45 \times 25) + (0.8 \times 32)) \times 1.2 = £44.22$
		3	Use formula to correctly calculate delivery and set up cost of all 3 sandpits	1b	<b>CAO</b> Blue $((0.45 \times 25) + (0.8 \times 28)) \times 1.2 = £40.38$ Green $((0.45 \times 25) + (0.8 \times 30)) \times 1.2 = £42.30$ Red $((0.45 \times 25) + (0.8 \times 32)) \times 1.2 = £44.22$
		10	Calculate total cost (incl. delivery and set up) of 1 sandpit	1c	<b>AFT</b> Blue $-(£40.38) + £25 = (£65.38)$ Green $-(£42.30) + £26 = (£68.30)$ Red $-(£44.22) + £30 = (£74.22)$
		10	Calculate total cost (incl. delivery and set up) of all 3 sandpits	1d	<b>AFT</b> Blue $-(£40.38) + £25 = (£65.38)$ Green $-(£42.30) + £26 = (£68.30)$ Red $-(£44.22) + £30 = (£74.22)$
		1	Their correct selection of a sandpit within budget	1e	<b>CAO</b> Blue or Green Their correct answer based on their calculations. <i>Answer must be within budget.</i>

16a (Q22 On-screen)	6			6CA	CAO Diagram must include accurate: <ul style="list-style-type: none"> <li>Title</li> <li>Labelling of x and y axis</li> <li>Appropriate and consistent scale on x and y axis</li> <li>10 points accurately plotted (allow tolerance of +/- 1 small square)</li> </ul>		
							
				If the answer is incorrect revert to:			
				28	Appropriate labelling and titling of diagram	1a	CAO Appropriate scale and label used on x axis
				28	Scale is suitable and consistent	1b	CAO Appropriate scale and label used on y axis
				28	Plot the data for the height and shoe size	1c	CAO 6 out of 10 points are plotted accurately (allow tolerance of +/- 1 small square)
28	Plot the data for the height and shoe size	1d	CAO All 10 points are plotted accurately (allow tolerance of +/- 1 small square)				
16b (Q22 On-screen)		28	Identification of positive correlation	1e	CAO Positive correlation		
16c (Q22 On-screen)		23	Finds the correct mode	1f	CAO 9		