

Highfield Functional Skills Qualification in Mathematics at Level 2

PAPERCODE: FSQC210P_MS_150421

Question	Total marks	Content Ref	Process	Marker annotation	Accepted answer AFT = allow follow through CAO = correct answer only OE = or equivalent
Underpinning Knowledge					
1	1	19	Identify fourth corner	1CA	CAO -2, 1
2	2			2CA	CAO 78.5°
		If answer incorrect revert to:			
		22	Method to find angle	1a	CAO – method (180 – 23) ÷ 2
		22	Correct angle	1b	CAO 78.5°
3	1	1	Correct difference found	1CA	CAO 3,218.8(ft)
4	1	4	Identifies correct equivalent fraction	1CA	CAO $\frac{120}{300}$
5	2			2CA	CAO (£)573,310.38
		If answer incorrect revert to:			
		1	Correctly converting to digits in sum	1a	CAO 810,530 – 237,219.62
		2	Correct answer	1b	CAO (£)573,310.38
6	1	9	Orders decimals correctly	1CA	CAO 25.246, 25.462, 25.642, 26.524

7	2			2CA	CAO 9.656 (litres)
		If answer incorrect revert to:			
		14	Appropriate method to find 1 pint OE	1a	CAO $2.84 \div 5 = 0.568$
		14	Converts to litres	1b	AFT $0.568 \times 17 = 9.656$ (litres)
8	1	9	Selects the correct value	1CA	CAO $\frac{7}{3}$
9	2			2CA	CAO Graph A: Negative Graph B: Positive
		If answer incorrect revert to:			
		28	Correctly identifies graph A	1a	CAO Negative
		28	Correctly identifies graph B	1b	CAO Positive
Problem Solving					
10	5			5CA	CAO Net Pay: £1513.14
		If answer incorrect revert to:			
		10	Calculates monthly taxed amount after tax-free allowance	1a	CAO $22124.48 - 12500 = 9624.48 \div 12 = 802.04$
		13	Calculates PAYE tax	1b	AFT $(802.04) \div 100 \times 18.62 = \text{£}149.34$
		13	Calculates NI tax	1c	AFT $(802.04) \div 100 \times 15.7 = \text{£}125.92$
		13	Calculates Pension	1d	CAO $1843.71 \div 100 \times 3 = \text{£}55.31$
10	Calculates Net Pay	1e	CAO $1843.71 - 149.34 - 125.92 - 55.31 = \text{£}1513.14$		

11	7		7CA	CAO Route C is fastest with accurate figures: 175 mins, 177.33 mins, 162 mins	
		If answer incorrect revert to:			
		8	Method to find reductions in time for Route A	1a	method $105 \div 9 \times 7 = (81.67 \text{ mins})$ (allow for appropriate rounding) $105 \div 9 \times 8 = (93.33 \text{ mins})$ (allow for appropriate rounding)
		8	Finds correct total time for Route A	1b	CAO 81.67 mins (allow for appropriate rounding) 93.33 mins (allow for appropriate rounding) 175 mins total
		11	Method to find additions in time for Route	1c	method $70 \div 6 \times 2 + 70 = (93.33 \text{ mins})$ (allow for appropriate rounding) $70 \div 5 + 70 = (84 \text{ mins})$
		11	Finds correct total time for Route B	1d	CAO 93.33 mins (allow for appropriate rounding) 84 mins 177.33 mins total
		5	Method to find additions in time for Route C	1e	method $60 \div 100 \times 42 + 60 = (85.2 \text{ mins})$ $60 \div 100 \times 28 + 60 = (76.8 \text{ mins})$
		5	Finds correct total time for Route C	1f	CAO 85.2 mins 76.8 mins 162 mins total
		1	Compares total times and makes correct decision	1g	CAO Route C is fastest with accurate figures: 175 mins, 177.33 mins, 162 mins

12	7		7CA	CAO 1.76 (hours) <i>Accept if converted to actual time e.g. 1h 46m</i>	
		If answer incorrect revert to:			
		23	Midpoints identified	1a	CAO 1, 3, 5, 7 and 9 <i>Accept other appropriate consistent points, e.g. upper or lower boundaries</i>
		24	Method to find total weight loss of Group A	1b	CAO – method (Allow for upper or lower boundaries used) $(7 \times 1) + (4 \times 3) + (11 \times 5) + (5 \times 7) + (6 \times 9) (= 163)$
		24	Method to find mean weight loss of Group A	1c	AFT $163 \div (7 + 4 + 11 + 5 + 6) (= 4.94)$
		24	Method to find total weight loss of Group B	1d	CAO – method (Allow for upper or lower boundaries used) $(13 \times 1) + (10 \times 3) + (7 \times 5) + (3 \times 7) + (1 \times 9) (= 108)$
		24	Method to find mean weight loss of Group B	1e	AFT $108 \div (13 + 10 + 7 + 3 + 1) (= 3.18)$
		25	Calculate difference	1f	AFT $(4.94) - (3.18)$ <i>Accept any appropriate rounding</i>
10	Correct difference calculated	1g	CAO 1.76 (hours) <i>Accept if converted to actual time e.g. 1h 46m</i>		

13	5			5CA	CAO 5 pieces drawn to scale and labelled with dimensions E.g.			
				If answer incorrect revert to:				
				20	Correct interpretation of drawing	1a	CAO All 5 pieces drawn (<i>if any other number of pieces drawn, do not give mark</i>)	
				20	Correct interpretation of drawing	1b	CAO All pieces are proportional to each other (<i>if incorrect scale used, but pieces are still in scale to another – still award mark</i>)	
				18	Correct interpretation of scale	1c	CAO At least one rectangle drawn correctly, to scale	
				18	Correct interpretation of scale	1d	CAO At least three of five rectangles drawn correctly, to scale	
				18	Correct interpretation of scale	1e	CAO All five rectangles drawn correctly, to scale	

14	5			5CA	CAO 8751.466368 (accept any appropriate rounding)
		If answer incorrect revert to:			
		14	Converts measurements from inches to cm	1a	CAO $20 \times 2.54 = 50.8(\text{cm})$ $12 \times 2.54 = 30.48(\text{cm})$ $6 \times 2.54 = 15.24(\text{cm})$
		17	Method to calculate surface area of at least one side	1b	AFT $(50.8) \times (15.24)$ OR $(50.8) \times (30.48)$ OR $(30.48) \times (15.24)$
		17	Finds total surface area of cuboid	1c	AFT $(50.8) \times (15.24) \times 2 = 1548.384$ $(50.8) \times (30.48) \times 2 = 3096.768$ $(30.48) \times (15.24) \times 2 = 929.0304$ $1548.384 + 3096.768 + 929.0304 = 5574.1824$
		3	Correct substitution into formulae	1d	AFT $(5574.1824) \times (0.5 \times 3.14)$
	3	Finds correct answer	1e	CAO 8751.466368 (accept any appropriate rounding)	
15	6			6CA	CAO (£)4.92 (per hour)
		If answer incorrect revert to:			
		13	Full method to find total money from sales	1a	method $(46 \times 6.75) + (31 \times 8.99) (= 310.5 + 278.69) = 589.19$
		6	Method to find 58% of total	1b	AFT $(589.19) \times 0.58$ OE
		6	Correct answer	1c	CAO 341.7302 (accept appropriate rounding, e.g. 341.73)
		11	Method to find total time spent	1d	CAO - method $(0.5 \times 46) + (1.5 \times 31) (= 69.5)$
		15	Method to find hourly rate	1e	AFT $(341.7302) \div (69.5)$
15	Correct answer	1f	CAO (£)4.92 (per hour)		

16	5			5CA	CAO 28(.98)% (accept any appropriate rounding e.g. 29%, 28.9796, etc.)
		If answer incorrect revert to:			
		25	Method to find mean of first 6 months	1a	$(212 + 194 + 245 + 302 + 275 + 242) \div 6$
		25	Method to find mean of first 6 months	1b	$(298 + 275 + 306 + 314 + 339 + 364) \div 6$
		25	Both mean values correct	1c	CAO 245 and 316
		5	Method to find % increase	1d	AFT - method $(316) - (245) = (71)$ $(71) \div (245) = (0.2898 \times 100)$
13	Correct value	1e	CAO 28(.98)% (accept any appropriate rounding e.g. 29%, 28.9796, etc.)		