

Level 2 Onscreen Functional Skills Mathematics

Sample Assessment Material

Mark Scheme

November 2010

Question	O/C	SS	C+R	Evidence	Marks	Notes
Q1a	C	R1	C8	shows process to convert between units	1 or	$71 \div 2.54 (= 27.95)$ or 27.95 or 27.95...
	C	A1	C2	Finds wheel size to nearest inch	2	28 cao
Q1b	O	A2	C2	Any suitable calculation	1	eg. 27.95×2.54 OR 28×2.54
				Total marks	3	
Q2a	O	R2	C7	considers size for patio	1 or	A rectangle with a side either 2, 4, 5 or 10.
	O	I1	C7	communicates solution by drawing patio correctly	2	draws a rectangular patio with correct area on the plan both 4 by 5 and 2 by 10 would fit
	O	R2	C7	considers dimensions for flowerbed	1 or	draws a rectangle with two sides adding to 24 OR four sides adding to 24
	O	I1	C7	communicates solution by drawing flowerbed correctly	2	draws a rectangular flowerbed with a perimeter of 24 on the plan 1 by 11 or 2 by 10 or 3 by 9 or 4 by 8 or 5 by 7 will all fit on the diagram.
Q2b	O	R2	C7	calculate remaining area of garden	1	77 or 68 or 61 or 56 or 53 or ft from candidate's diagram provided both patio and flowerbed are shown
				Total marks	5	

Question	O/C	SS	C+R	Evidence	Marks	Notes
Q3a	C	R3	C2	shows a suitable process to calculate saving	1 or	$10 \times 33 (= 330)$ OR $10 \times 22 + 26 (= 246)$ OR $10 \times 11 - 26 (= 84)$ OR $10 \times 33 - (10 \times 22 + 26) (= 84)$
	C	A1	C2	calculates correct saving	2	£84 and supporting working
Q3b	O	A1	C2	uses calculation OR uses a suitable T&I process (at least 2 trials) OR uses algebra	1 or	$26 \div 11 (= 2.36..)$ OR e.g. 2 of: $1 \times 33 (= 33)$ $1 \times 22 + 26 (= 46)$ $2 \times 33 (= 66)$ $2 \times 22 + 26 (= 70)$ $3 \times 33 (= 99)$ $3 \times 22 + 26 (= 92)$ OR algebra e.g. $22n + 26 < 33n$
	O	I2	C1	identifies that 3 journeys produce a saving	2	3 seen
				Total marks	4	
Q4a	O	R3	C9	Line graph	1 or	Suitable linear scale both axes
	C	A1	C9	Line graph	2	4 accurately plotted points on linear scaled graph
Q4b	O	I1	C10	arrives at suitable estimate using graph or table	1	accept 25 or 24.80 or other answer ft from graph or working seen: $28 - 20 (1000 - 500 \text{ cards}) = 8$ $8 \div 5 \times 3 = 4.8$ $20 + 4.8$ or 24.80 seen or working seen: $28 \div 1000 \times 800 \text{ oe} = 22.40$ seen
				Total marks	3	

Question	O/C	SS	C+R	Evidence	Marks	Notes
Q5	O	R2	C9	Interprets problem and chooses at least one column or row	1 or	2 of: 10 am start, 25 minute sessions, no overlap of equipment (or people) eg 10, 10.25, 10.50..... at least 2 intervals of 25 minutes or 10, 10.30, 11 (consistent short rests so at least 2 intervals of 30 minutes)
	O	R2	C8	Inteprets problem and chooses more than one column or row	2	all of: 10 am start, 25 minute sessions, no overlap of equipment (or people) eg 10, 10.25, 10.50, 11.15 or 10, 10.30, 11, 11.30 (consistent short rest)
	O	A1	C9	considers criteria for several people (or pieces of equipment)	1 or	All times given for at least 3 people OR 3 pieces of equipment OR no times shown but equipment and people do not overlap for 3 complete rows, all must be taking part in the same session
	O	R3	C8	All information included	2	Completes correctly showing all 4 people taking part in the same session
				Total marks	4	

Notes for Q5:

Any combination of axes acceptable, ie time/people or time/activity or activity/people

Answers may be typed, accept initials (A,B, C, D) or (R, W, C, S) or abbreviated versions of exercises

Question	O/C	SS	C+R	Evidence	Marks	Notes
Q6	C	R1	C4	correct method to calculate auctioneer's fee for either sale or both sales or total sales	1 or	$0.05 \times 4000 (= 200)$ OR $0.05 \times 2100 (= 105)$ OR $0.05 \times '6100' (= 305)$ OR $0.05 \times '10000' (= 500)$
	O	R2	C2	correct method to calculate profit/loss for either sale or both sales or total sales	2 or	$4000 - 3420 - '200' (= 380)$ OR $2100 - 2300 - '105' (= -305)$ OR $'10000' - '9420' - '500' (= 80)$ OR $'6100' - '5720' - '305' (= 75)$ NB. Candidate may use words profit/loss instead of signs - accept this
	C	A1	C1	both profits correct or total profit correct	3	380 AND -305 (305 must have negative sign) OR profit 380 AND loss 305 OR 80
	O	I2	C1	calculates their profit and makes suitable decision	2	Profit of £80 OR Profit/loss stated with amount ft their working
				Total marks	4	
Q7	O	R1	C1	Interprets problem correctly and begins to address features	1 or	3 of: correct hours for Jo or Bill or Seth or Mira or Sam or 3 staff on duty at all times
	O	I1	C9	improves schedule	2 or	4 of: correct hours for Jo or Bill or Seth or Mira or Sam or 3 staff on duty at all times
	O	R3	C9	a fully correct schedule meeting all constraints	3	all of: correct hours for Jo Bill, Seth, Mira, Sam, and 3 staff on duty at all times
				Total marks	3	
Q8	O	A1	C6	produces an attempt at a net for box	1 or	produces a net of an open (5 faces) OR closed (6 faces) box either 5 or 6 joined rectangles that could be a net required; rectangles may have wrong dimensions
	O	I1	C6	produces a fully accurate net for open or closed box	2	net has accurate dimensions and joining of faces
				Total marks	2	

Question	O/C	SS	C+R	Evidence	Marks	Notes
Q9	O	R1	C2	begins to interpret problem	1 or	drags in 1 activity from each day. At least 1 total is shown and is correct but need not meet the constraints
	O	A1	C4	adds time and cost correctly	2 or	totals both time and cost correctly but one is outside constraints OR both inside constraints but 1 is wrongly added
	O	A2	C8	finds a solution which meets all criteria	3	totals both time and cost and both inside constraints i.e. cost <£250 AND $6 \leq \text{time} \leq 8$ Solutions are: Tennis, Paintball, Aerobics time $7\frac{3}{4}$ hours £215 Tennis, Paintball, Badminton 8 hours £191.50 Ten pin bowling, Archery, Cinema 6 hours £213.50
					3	
Q10	C	A1	C12	finds a correct answer for probability	1	$\frac{7}{30}$ or 0.23 rec or 23.3 rec% accept 0.23 or 23% OR 20% of 30 =6 ducks
	O	I2	C4	makes a correct (ft) decision with reason from valid comparison i.e. both fraction, or both decimal or both percentage	1	e.g. Lisa's game because 23% is greater than 20% or Lisa's game because $\frac{7}{30}$ is greater than $\frac{6}{30}$ or Lisa's game because 0.23 is greater than 0.2 Lisa's game because you can ($7 > 6$)
					2	

Question	O/C	SS	C+R	Evidence	Marks	Notes
Q11	O	I1	C10	Begins to interpret problem	1 or	650 OR 740 seen or implied
	O	I2	C10	Gives justification for answer	2	No, he spends most of his money in the second week oe
	O	I1	C1	Begins to interpret problem	1 or	Ft from (a) totals outgoings seen (1980) OR total income seen (1800) OR -104.50 - - 24.50 seen or implied OR evidence of other valid method
	O	I2	C1	Gives justification for answer	2	Yes, he spends more than he puts in oe
					3	
Q12	O	R1	C5	understands problem and substitutes into formula for any leg of journey or shows number of minutes to travel 1 mile for either speed	1 or	20/30 or 25/30 or 45/30 or 40/50 or states 1 mile is done in 2 minutes leg A to B or B to C or 1 mile in 1.2 minutes C to A
	C	A1	C5	calculates time for any leg(s) correctly in hours or minutes and attempts to find solution in hours or minutes	2 or	40 minutes or 50 minutes or 90 minutes or 0.8 hours 0.6666.... hours or 0.8333.....hours or 1.5 hours OR '0.8' x 60(=48) or '40' + '50' + '48'(=138) OR '1.5' + '0.8' (=2.3)
	C	A1	C8	finds correct total time	1	2 hours 18 minutes accept 138 minutes and nothing in the hours AB
					3	