Function Machines and Flow Charts

Question	Answer	Mark	Mark scheme	Additional guidance
9 (a)	16	B1	cao	
(b)	19	M1	starts method to find input using inverse operations eg 28 + 10 (=38) **or** sight of +10 and ÷2	+10 and ÷2 could be seen in a flow diagram Working may be next to number machine.
		A1	cao	
(c)	Shown	M1	for carrying out at least one trial **or** for forming a suitable equation, eg $2x - 10 = x$ **or** for identifying 10	Trial can be for any value, must be correctly evaluated. Accept correct inverse function trial, correctly evaluated. If working seen on the number machine provided in the question allow for a trial other than input 13 or output 28.
		C1	for showing that an input of 10 gives an output of 10	Allow $10 \times 2 = 20 - 10 = 10$ for M1C1

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Question	Answer	Mark	Mark scheme	Additional guidance
12 (a)	9	B1	cao	
(b)	6	M1	starts to find input using inverse operations eg $154 \div 11$ (= 14) **or** indicates $\div 11$ **and** -8 **or** derivation of equation eg $(8+ n) \times 11 = 154$ **or** starting to solve for unknown eg $154 - 8 \times 11$ (= 66)	$\div 11$ and -8 could be seen in a flow diagram Evidence could be provided by algebraic statement, numerical statements or by diagram
		A1	cao	

Question	Answer	Mark	Mark scheme	Additional guidance
12 (a)	11	B1	cao	
(b)	22	M1	Starts to find input using inverse operations, 41 + 3 (= 44) **or** sight of +3 **and** ÷2 **or** derivation of equation eg $2n - 3 = 41$	+3 and ÷2 could be seen in a flow diagram Evidence could be provided by algebraic statement, numerical statements or by diagrams
		A1	cao	

Question	Answer	Mark	Mark scheme	Additional guidance
13 (a)	8	M1 A1	for 11 + 5 (= 16) cao	
(b)	– 3 or × 0.7	P1	for 28 ÷ 4 (= 7) **or** 10 – 3 (= 7) **or** 10 × 0.7 (= 7)	7 may be seen next to function machine or embedded within a calculation
		A1	cao	Accept + $-$ 3 or $\times \frac{7}{10}$