AQA Certificate

USE OF MATHEMATICS

43503F – Foundation Core Unit
Mark scheme

4350
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Version/Stage: v1.0 Final

Mark schemes are prepared by the Lead Assessment Writer and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all associates participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students' responses to questions and that every associate understands and applies it in the same correct way. As preparation for standardisation each associate analyses a number of students' scripts: alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, associates encounter unusual answers which have not been raised they are required to refer these to the Lead Assessment Writer.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

Further copies of this Mark Scheme are available from aqa.org.uk

Key to mark scheme abbreviations

M	mark is for method
m or dM	mark is dependent on one or more M marks and is for method
A	mark is dependent on M or m marks and is for accuracy
B	mark is independent of M or m marks and is for method and accuracy
E	mark is for explanation
√or ft or F	follow through from previous incorrect result
CAO	correct answer only
CSO	correct solution only
AWFW	anything which falls within
AWRT	anything which rounds to
ACF	any correct form
AG	answer given
SC	special case
OE	or equivalent
A2,1	2 or 1 (or 0) accuracy marks
–x EE	deduct x marks for each error
NMS	no method shown
PI	possibly implied
SCA	substantially correct approach
c	candidate
sf	significant figure(s)
dp	decimal place(s)

No Method Shown

Where the question specifically requires a particular method to be used, we must usually see evidence of use of this method for any marks to be awarded.

Where the answer can be reasonably obtained without showing working and it is very unlikely that the correct answer can be obtained by using an incorrect method, we must award **full marks**. However, the obvious penalty to candidates showing no working is that incorrect answers, however close, earn **no marks**.

Where a question asks the candidate to state or write down a result, no method need be shown for full marks.

Where the permitted calculator has functions which reasonably allow the solution of the question directly, the correct answer without working earns **full marks**, unless it is given to less than the degree of accuracy accepted in the mark scheme, when it gains **no marks**.

Otherwise we require evidence of a correct method for any marks to be awarded.

Question	Solution	Marks	Total	Comments
1(a)	$53.2(0) - 23.4(0)$	M1		
	29.80	A1	2	29.8 = M1
(b)(i)	22	B1	1	Accept 22.00
(ii)	correct ordering	M1		Or 455 and 459 identified and attempt at centre
	457	A1	2	
(iii)	$449 + 459 + 471 + 455$	M1		1834
	$\dfrac{\text{their } 1834}{4}$	m1		
	458.50	A1	3	458.5 = M1
(c)	all sectors correct ± 2 degrees AND correct labels: insurance $= 100°$ petrol $= 180°$ repairs &servicing $= 60°$ other motoring costs $= 20°$	B4	4	3 sectors correct with labels = B3 2 sectors correct with labels = B2 1 sector correct with label = B1 no labels -1 OR no chart drawn: 4 correct angles seen = SC2 1 correct angle seen =SC1 OR correct method seen for an angle =SC1
(d)(i)	London	B1	1	
(ii)	South West and East Midlands	B1	1	
(iii)	$467+$their $(\geq {}^{-}50$ to $ {}^{-}{\leq}25)$ any number between 417 to 442 inclusive	M1 A1	2	
	Total		**16**	

Question	Solution	Marks	Total	Comments
2(a)	1.60 or 7.40 seen	B1		320 = B1
	$2 \times 1.6(0) + 7.4(0)$	M1		
	10.60	A1	3	10.6 = SC2 11.55 = SC2
(b)	12.30	B1	1	
(c)	$10.30 + 2 \times 3.50$ their $17.3(0) - 15.8(0)$ 1.50	M1 m1 A1	3	17.30 = M1 accept $15.8(0) -$ their $17.3(0)$
	Total		**7**	
3(a)(i)	4×60	B1		Or "240 is the cost of 1st class" $240 \div 60 = 4 \ (= B1)$
	$50x$: explains that 50(p) is the cost of 2nd class **and** connects this to x 2nd class $(C = 50x + 240)$	B1	2	Must refer to x
(ii)	$350 = 50x$	M1		o.e
	$(x) = 350 \div 50$	M1		
	7	A1	3	
(b)	$60y$ or $50y$ or $y60$ or $y50$	B1		Alternate Solution: difference in cost is 10(p) = B1
	their $60y =$ their $50y + 160$	M1		$(£)1.60 \div 10(p)$ = M1
	one correct step to solve equation or $(y) = 16$	A1		$(y) = 16$ = A1
	32	A1	4	32 = A1
	Total		**9**	

Question	Solution	Marks	Total	Comments
4(a)	1.414	B1	1	
(b)(i)	$35.4 \times 25.(0)$	M1		
	885	A1	2	
(b)(ii)	their $885 \div 2 \div 2$	M1		or $(35.4 \div 2) \times (17.7 \div 2)$
	221.25	A1ft	2	ft from (b)(i) accept 221 or 221.3 or 221.2
(c)	$\dfrac{35.4}{100} \times 4.83$	M1		
	any number between 1.70982 to 1.71 inclusive	A1	2	
			7	

Question	Solution	Marks	Total	Comments
5(a)	2:3	B1	1	
(b)	$\pi \times 8$	M1		or $2 \times \pi \times 4$
	any number between 25.1 to 25.133 inclusive	A1	2	
5(c)	πr^2 used	M1		
	$\pi \times 6 \times 6$	m1		Substitution of $r = 6$
	any number between 113 to 113.112 inclusive	A1	3	
	Total		**6**	
6(a)	one appropriate and correct area calculated or seen	B1		rectangle, triangle or trapezoidal area: $$40 \times 16 \text{ or } 640$$ $$40 \times 8 \text{ or } 320$$ $$30 \times 8 \text{ or } 240$$ $$30 \times 16 \text{ or } 480$$ $$8 \times 10 \text{ or } 80$$ $$\frac{1}{2} \times (30 + 40) \times 8 \text{ or } 280$$ $$\frac{1}{2} \times (16 + 8) \times 10 \text{ or } 120$$ number only required = B1 but $\frac{1}{2} \times 8 \times 10 = 40$ needed
	Fully correct combination of areas used with addition or subtraction	M1		$640 - 40$ or $320 + 240 + 40$ or $320 + 280$ or $480 + 120$ or $480 + 80 + 40$
	600	A1	3	
(b)	their 600×30	M1		alternate solution: one correct volume $30 \times 40 \times 16 (= 19200)$ $30 \times \frac{1}{2} \times 8 \times 10 \ (= 1200)$ =M1
	18 000	A1	2	$18000 = $ A1
	Total		**5**	
	TOTAL		**50**	