GCSE MARKING SCHEME

SUMMER 2022

GCSE
MATHEMATICS – COMPONENT 2
(HIGHER TIER)
C300UB0-1

INTRODUCTION

This marking scheme was used by WJEC for the 2022 examination. It was finalised after detailed discussion at examiners' conferences by all the examiners involved in the assessment. The conference was held shortly after the paper was taken so that reference could be made to the full range of candidates' responses, with photocopied scripts forming the basis of discussion. The aim of the conference was to ensure that the marking scheme was interpreted and applied in the same way by all examiners.

It is hoped that this information will be of assistance to centres but it is recognised at the same time that, without the benefit of participation in the examiners' conference, teachers may have different views on certain matters of detail or interpretation.

WJEC regrets that it cannot enter into any discussion or correspondence about this marking scheme.

EDUQAS GCSE MATHEMATICS

SUMMER 2022 MARK SCHEME

Component 2: Higher Tier	Mark	Comment
1.* Mid-points: 45, 75, 105, 135, 165	B1	May be implied from correct totals, see below
$45 \times 9 + 75 \times 33 + 105 \times 38 +$ $135 \times 8 + 165 \times 2$	M1	FT 'their mid-points' provided at least 4 of these are at the bounds or within the groups 405 + 2475 + 3990 + 1080 + 330 (= 8280) If mid-points are **not** given then no marks except for the following cases: • B1 M0 for five correct products not added • B1 M1 for five correct products in an addition • B0 M1 for four correct products in an addition
÷ 90	m1	
92 (grams)	A1	FTcorrect evaluation using their mid-points Allow truncated or rounded decimal answers
	(4)	
2.*(a) 2 : 6 : 3	B2	Must be in the correct order. B1 for any correct but unsimplified ratio e.g.1 : 3 : 1.5, 2x : 6x : 3x, 10 ; 30 :15
(b) $\dfrac{3}{11}$ oe	B1	FT 'their 3' and 'their 11' providing the numerator and denominator in the final fraction are integers FT allowed from non-numeric answers to (a) e.g. 6x : 2x : x leading to $\dfrac{1}{9}$
	(3)	
3.* $10\,000 \div 1250$ (= 8)	M1	
$35\,950 \times (1 - 0.18)^8$	M2	FT for possible M2 for sight of one of: • $35\,950 \times (1 - 0.18)^{\text{'their 10 000 ÷ 1250'}}$ • $35\,950 \times 0.82^{\text{'their 10 000 ÷ 1250'}}$ May be seen in stages but the method must be seen and fully correct e.g. 8 stages with × 0.82 seen at each stage M1 for sight of $35\,950 \times (1 - 0.18)$ oe complete and correct method or sight of 29 479
7348.69 or 7348.68(...) or 7348.7 or 7349 or 7350	A1	CAO A1 only from fully correct working.
$(35\,950 - 7348.69 =)(£)\,28\,601.31$	B1	If M1 M2 A1, accept answer in range 28 600 to 28 602; FT 'their 7348.69' provided M1 M2 awarded If M1 M2 A1 B0 awarded, then award further SC1 for an answer of 79(.5…)% or 80% decrease from $\left(\dfrac{35950 - 7348.69}{35950} \times 100 =\right)$
	(5)	

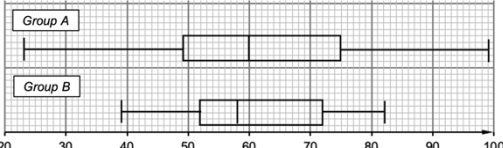| 4.* (a) $\frac{42}{60} \times 360$ or 42×6 or 360×0.7 oe	M2	M1 for appropriate sight of $\frac{42}{60}$ or 0.7 oe or 42×360 (= 15 120)
252(°)	A1	CAO
(b)(i) A valid assumption e.g. 'The wheel spins at a constant speed.' or 'The wheel is spinning at the same rate all the time'	E1	Allow e.g. 'Each turn takes the same amount of time' 'The wheel is spinning at the same speed' 'We do not know precisely how many degrees it turns in a second' 'The wheel turns every second' 'The wheel never stops and starts' 'The wheel is always spinning'. Allow answers that state that the timing must not vary e.g. 'Each second must be accurate' Do not allow, 'The wheel turns 252° each second'.
(b)(ii) A valid impact based on their valid assumption e.g. 'If it was spinning faster, it may have turned through more degrees' or 'If it was spinning more slowly, it may have turned through fewer degrees.'	E1	If no valid assumption is made, then this mark cannot be awarded. Cannot award E0 E1. Allow e.g. 'My answer would be different.'
	(5)	
Q5.*(a) $5 - 11 = 5x - 2x$ or $2x - 5x = 11 - 5$ $x = -2$	B1 B1	FT from $ax = \pm 6$, $a \neq 1$ or $\pm 3x = b$ accept $\frac{\pm 6}{a}$ or $\frac{b}{\pm 3}$ but if on FT either simplifies to an integer the answer must be given as an integer. '$x =$' can be omitted but must not be wrong if there. Correct answer implies first B1.
(b) $8x - 3x - 1 = 2$ or $8x = 2 + 3x + 1$ or better	B1	Expands the brackets
$5x = 2 + 1$ or better	B1	Only FT from $8x - 3x + 1 = 2$ to obtain $5x = 2 - 1$ or better
$x = \frac{3}{5}$ or equivalent fraction	B1	FT answer of $\frac{1}{5}$ or equivalent fraction only
(c) Yes indicated and clear explanation e.g. '−1 should not be included.' 'x can only be 0, 1, 2 or 3' '1 < −1 + 2 ≤ 5 is incorrect' '1 < 1 ≤ 5 is incorrect'	E1	Yes may be implied if a box is not ticked Allow Yes with 'x can be 0, 1, 2 or 3'
(d) Empty circle at −2 with arrow right	B1	If a line not an arrow, then line must extend to near the end of the number line; must be no indication of termination on the right.
	(7)	

2

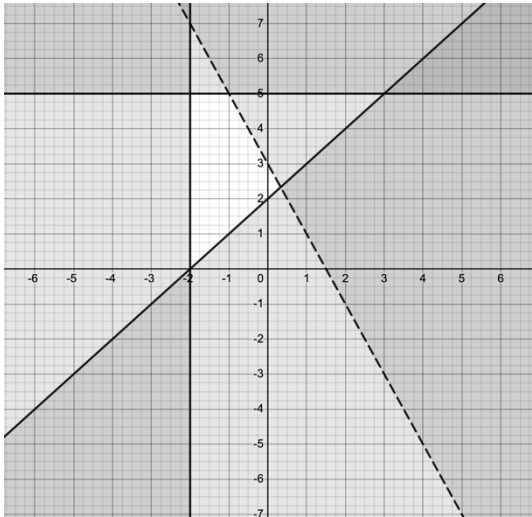| 6*(a) 17 (seconds)	B1	Allow answers in the range 17 to 17.4
(b) 'Unlikely' and valid explanation e.g. 'The line of best fit predicts 64°C at 70 seconds' or "The temperature has stayed the same (but the line of best fit is increasing)' or 'The line of best fit predicts just over 50 seconds for 52°C'. 'The temperature is 50 degrees at 50 seconds (so at 70 seconds it would be a lot more)'	E1	Ignore additional comments if correct statement seen. Allow 'unlikely' with explanations that imply the use of the line of best fit e.g. 'The temperature should have raised a lot more and be way past 52' 'The temperature is 51 degrees at 50 ' Do not allow e.g. 'The data is unreliable as it only goes to 50 seconds.'
(c) $y = \dfrac{7}{10}x + 15$ oe	B3	Must be given as an equation. If B3 not awarded award one of the following: B2 for sight of $y = \dfrac{7}{10}x + c$ or gradient or $(m =) \dfrac{7}{10}$ B1 for sight of $y = mx + 15$ or c = 15 For B2 or B1, m or c in the equation could be algebraic or numeric
(d) Valid explanation e.g. 'The increase in temperature per 1 second' 'The rate of increase in temperature' 'How quickly the temperature increases with time'	E1	Allow explanations that consider both the steepness of the line and the variables, e.g. 'How steep the line is so as time increases so does temperature.' 'A change in temperature as the time goes up'. Do not allow, e.g. 'The steepness' 'As time increases temperature increases'
	(6)	

7.*			
(BC =) $4.8 \tan 57°$ or $\dfrac{4.8}{\tan(180-90-57)}$	M2	M1 for $\tan 57° = \dfrac{BC}{4.8}$ si or $\tan(180\text{-}90\text{-}57) = \frac{4.8}{BC}$ si	
7.39 to 7.4 si	A1	CAO	
(Area =) $\dfrac{1}{2} \times 7.39135... \times 4.8$	M1	FT '$\dfrac{1}{2} \times$ their derived $BC \times$ 4.8' provided 'their derived BC' is from use of trigonometry	
17.7(392...) (cm^2)	A1	FT 'their derived BC' If correct, accept answer in range 17.7 to 17.8; accept 18 following correct working	
Alternative (Higher tier) method 1			
(BC =) $\dfrac{4.8 \times \sin 57}{\sin(90-57)}$	*M2*	*M1 for* $\dfrac{BC}{\sin 57} = \dfrac{4.8}{\sin(90-57)}$	
7.39 to 7.4 si	*A1*	*CAO*	
(Area =) $\dfrac{1}{2} \times 7.39135... \times 4.8$	*M1*	*FT '*$\dfrac{1}{2} \times$ *their derived $BC \times$ 4.8' provided 'their derived BC' is from use of trigonometry*	
17.7(392...) (cm^2)	*A1*	*FT 'their derived BC'* *If correct, accept answer in range 17.7 to 17.8; accept 18 following correct working*	
Alternative (Higher tier) method 2			
Area of ABC = $\dfrac{1}{2} \times 4.8 \times AC \times \sin 57$	*M1*	*Not awarded until AC=* $\dfrac{4.8}{\cos 57}$ *oe substituted.*	
$(AC =) \dfrac{4.8}{\cos 57}$	*m2*	*m1 for* $\cos 57 = \dfrac{4.8}{AC}$	
8.8 to 8.81(3...) si	*A1*	*CAO*	
Area of ABC = $\dfrac{1}{2} \times 4.8 \times 8.81.. \times \sin 57$ *=17.7(392...) (cm^2)*	*A1*	*FT 'their derived AC'* *If correct, accept answer in range 17.7 to 17.8; accept 18 following correct working*	
	(5)		
8. (Vol of whole cheese =) $\pi \times 7^2 \times 5$	M1		
769.69 to 769.79	A1	Accept 245π Allow 770 from correct working	
$\dfrac{154}{769.69} (\times 100)$	m1	FT 'their derived 769.69' Award for $(1 - \frac{245\pi - 154}{245\pi}) (\times 100)$ or equivalent complete method	
20(....%)	A1		
Alternative method:			
Angle of sector = $\dfrac{154}{\pi \times 7^2 \times 5} \times 360$	*M1*		
72.(0...)	*A1*	*May be embedded in further work*	
$\dfrac{72}{360} (\times 100)$	*m1*	*FT 'their derived 72°'*	
20(....%)	*A1*		
	(4)		

9.		
27×1.5 oe	M1	Allow 27×1.3
40.5	A1	CAO May be implied in total distance (51) later.
$\dfrac{1.5+40.5+9}{0.75+1.5+1}$ $\left(=\dfrac{51}{3.25}\right)$	m1	Must be using km and hours FT 'their 40.5' Allow m1 but A0 for $\dfrac{1.5 + their\ 40.5 + 9}{3.15}$
15.6(9..) or 15.7 km/h (< 16.1 km/h)	A1	FT provided the answer is less than 16.1
Alternative method 1 for final 2 marks (winning time =) $\dfrac{1.5+40.5+9}{16.1}$ _oe_	m1	_FT 'their 40.5' including the correct use of 1.3 hours_
3.1(6...) (hours) < 3.25 (hours)	A1	_A0 unless the 3.25 hours seen_
Alternative method 2 for final 2 marks (Possible distance travelled by winner =) 16.1 × 3.25 AND (Length of race =) 1.5 + 40.5 + 9 52(.325 (km) > 51 (km)	m1 A1	_FT 'their 40.5'_
	(4)	

10.		
Correct perpendicular bisector construction of SR with appropriate arcs	B2	B1 for perpendicular bisector within tolerance ($\pm$ 2°, $\pm$ 2mm) without arcs or with invalid arcs
Correct perpendicular to the path through Y with appropriate arcs	B2	B1 for perpendicular though Y within tolerance ($\pm$ 2°) without arcs or with invalid arcs
Correct angle	B1	FT provided at least B1 B1 awarded tolerance ($\pm$ 2°); if correct 34°, allow e.g. 034°
	(5)	

11. (a)		
Enlargement, centre (4, 5), sf ½	B2	B1 for any 2 correct elements Allow from point (4, 5)
(b) Triangle with vertices (−4, −3), (−8, 5), (−2, 3)	B2	Allow a good freehand; ignore labels B1 for a triangle with 2 correct vertices or for all 3 correct vertices plotted but not joined OR for an enlargement with scale factor −1, with correct orientation with incorrect placement e.g. use of centre (3, 0) leading to triangle with vertices (4, −3), (−2, −1), (2, −9) If no marks, award SC1 for a correct enlargement of PQR with scale factor −1 and centre (0, 3): (−3, 2), (−6, 3), (−4, −1)
	(4)	

12. (a) 215	B1	
(b) $2n^2 + 1$ oe	B2	B1 for sight of $2n^2$
	(3)	
13. (Density of copper =) $\dfrac{2150.4}{240}$	M1	If a mixture of methods is employed, use the one that awards marks to the candidates advantage.
8.96 or 9 (g/cm³)	A1	
(mass of sphere =) $\dfrac{4}{3}\pi x^3 \times 8.96$	m1	FT 'their 8.96'
$37(.5.....)x^3$ $(< 38x^3)$	A1	Allow answers in the range $37(x^3)$ to $37.7(x^3)$ from correct working.
Alternative method 1: *(For equal volumes)* $x^3 = 240 \times \dfrac{3}{4} \div \pi$	M1	*Allow for* $240 = \dfrac{4}{3} \times \pi \times x^3$
$= 57.29.....$	A1	*Allow answers in the range 57.28 to 57.9* *May be seen in later working*
EITHER (For equal mass multiplier of x^3 =) *2150 ÷ 57.29*	m1	
= 37.53…(and less than 38)	A1	
Alternative method for the last two marks *OR (If multiplier of x^3 = 38, mass =)* *38 × 57.29….*	m1	
= 2177(.2…...g.) AND this is greater than 2150.4g	A1	
Alternative method 2: *(Density of copper =)* $\dfrac{2150.4}{240}$	M1	
8.96 or 9 (g/cm³)	A1	
$\dfrac{4}{3}\pi \times k = 38$ *si*	M1	
$k = 9.07....$ *(and it is less than this so mass is less than $38x^3$)*	A1	
	(4)	
14. $3125x^{10}y^{-1}$ or $\dfrac{3125x^{10}}{y}$	B3	Mark final answer. Must be a single expression B2 for any one of: • any two elements of the product correct e.g. $5^5 x^{10} y^{-1}$ or $\dfrac{3125x^{-4}}{y}$ • a correct answer seen then spoiled B1 for one of: • any one element of the product correct e.g. $25x^{10}y$ • sight of $5^5x^{10}y^5$ or $3125x^{10}y^5$ in working (from correct expansion of the bracket)
	(3)	

15.(a) No seen or implied and 275 × 3 or 900 ÷ 275 or 900 ÷ 3 **and** 275 seen	M1	Allow use of $274.\dot{9}$ or 274.999.. but not 274.9 or 274.99
Sight of 825 or 3.2(727...) and No indicated	A1	Allow 3 × 275 < 900 and No indicated
(b) 367.5 – 152.5 – 87.5	M2	M1 for one of: • a calculation (min – max – max) with all values in the ranges 365 < a < 370, 150 < b < 155, 85 < c < 90 e.g. 367.5 –152.5 –86.5 or 369 –152.5 –87.5 • a calculation with two correct values and the third in the ranges 365 ≤ a < 375, 145 < b ≤ 155, 80 < c ≤ 90 e.g. 367.5 –152.5 – 82.5 or 365 -152.5 – 87.5 Allow M1 for 365 – 155 – 90 or 365 – 245 (= 120) If no marks award SC1 for sight of 152.5, 87.5 and 367.5
127.5 (grams)	A1	CAO
	(5)	

16. (a)(i)				
Mark	f	cf		
0 < p ≤ 20	0	0	B1	
20 < p ≤ 40	3	3		
40 < p ≤ 60	20	23		
60 < p ≤ 80	15	38		
80 < p ≤ 100	7	45		

(a)(ii) Valid explanation e.g. '23 terms include all marks as far as 60'	E1	Allow valid explanations based on 22.5th term. Allow e.g. '23 people less than or equal to 60 and 22 people above 60 Must say more than '60 is in the middle group.' FT 'their 45' providing from one error in arithmetic only
(b)(i) Correct box plot Left whisker 23, LQ 49, median 60, UQ 75 and right whisker 99 	B3	B2 for complete box plot with four correct values B1 for any three values correctly plotted in a box plot or for maximum of 99 seen but not drawn on box plot.
(b)(ii) Valid comment comparing medians e.g. 'On average, Group A did better than Group B as the median was 60 whereas Group A's median was 58' or 'The medians are similar so there is not much difference between the groups.'	E1	Must be a comparison not simply a comment about one group Allow e.g. 'Group A had a higher median (so did better on average)'. 'The average of group A is two marks higher' 'Group A had a higher average of 60' as clearly using the median as the average. Do not allow e.g. 'Group A had a median of 60 and Group B had a median of 58.' (no comparison) 'The medians are similar' without further explanation. 'On average Group A were better', (no reference to median or comparison of values).
Valid comment comparing IQRs or ranges e.g. 'Group B's results were less varied than Group A's as the IQR was 20 which was less than Group A's which was 26' or 'Group B's results were more consistent than Group A's as the range was 43 compared to Group A's range of 66.'	E1	Must be a comparison not simply a comment about one group Allow e.g. 'Group B's marks were more consistent as the IQR is smaller' Do not allow e.g. 'Group A had a range of 76 and Group B had a range of 43.' (no comparison) Do not allow if values contradict the statement e.g. 'Group B has lower range, only 20 but A's range is 26' need IQR not range here.
	(7)	

8

17. Lines $x = -2$ AND $y = 5$ drawn correctly	B1	Allow solid or dotted lines for the first 3 marks If more than one horizontal or vertical line drawn the correct line must be indicated. e.g. B0 if x = −2, y = 5 and x = 2 drawn unlabelled
Line $y = 3 - 2x$ drawn correctly	B1	.
Line $y = x + 2$ drawn correctly	B1	
Region indicated with correct marking of boundaries	B1	$y = 3 - 2x$ must be shown as dotted or indicated that it is not included, and the other lines must be solid and not dotted. FT 'their 4 lines' provided at least B2 previously awarded, solid lines used except for 'their $y = 3 - 2x$'.
	(4)	
18. (a) $\frac{33}{70}$ oe ISW	B1	Allow B1 for 0.47(142..) or 47(.142..)%
(b) $\frac{31}{64}$	B2	Allow B2 for 0.484(375) or 48.4(375)% B1 for sight of $\frac{a}{64}$ with a < 64 or $\frac{31}{b}$ with 31 < b ≤ 70. ISW for incorrectly simplifying their fraction
	(3)	
19(a) (gradient =) -4	B1	May be seen as: $y = -4x + c$ or $4x = c -y$ where c may be numeric but $c ≠ 5$
$-1 = -4(1) + c$ or $4(1) = c - (-1)$ oe	M1	FT 'their −4'
$y = -4x + 3$ or $y = 3 - 4x$ $y = -4x + 5$ is B0 M0 A0 (the original) $y = -4x - 3$ probably from using (-1, 1) check B1 M0 A0	A1	CAO If gradient of 4 used, award M1 and SC1 for an answer of $y = 4x - 5$ if appropriate working seen
(b) $y = 5x + 7$ oe	B2	B1 for gradient = 5, may be seen in an equation e.g. $y = 5x + c$
	(5)	

20. (a)		
$R \propto P\left(1-\dfrac{P}{100}\right)$ or $R = kP\left(1-\dfrac{P}{100}\right)$	M1	Allow for $R \propto kP\left(1-\dfrac{P}{100}\right)$
$0.02 = 50k\left(1-\dfrac{50}{100}\right)$ oe	M1	Award of this M1 implies the previous M1
$R = 0.0008P\left(1-\dfrac{P}{100}\right)$ or $R = \dfrac{P}{1250}\left(1-\dfrac{P}{100}\right)$ oe	A1	k = 0.0008 or $\dfrac{1}{1250}$ only Do not allow e.g. $R \propto 0.0008P\left(1-\dfrac{P}{100}\right)$ Mark final answer but allow the mark for sight of the correct equation in (b)
(b) $(0.0008 \times)\,P\left(1-\dfrac{P}{100}\right) = 0$ or better	M1	Must see an equation used here FT 'their equation' of the form $R = kP\left(1-\dfrac{P}{100}\right)$ but allow $P\left(1-\dfrac{P}{100}\right) = 0$
P = 100	A1	Ignore P =0 if P = 100 given.
	(5)	
21.(a) 40320	B2	B1 for $8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2\,(\times 1)$ or 8!
(b) 720 or $\dfrac{1}{8} \times \dfrac{1}{7}$	B2	B1 for $(1 \times 1 \times)\,6 \times 5 \times 4 \times 3 \times 2\,(\times 1)$ or 6! B1 for sight of $\dfrac{1}{8}$ and $\dfrac{1}{7}$ oe only
$\dfrac{720}{40320}$ or $\dfrac{1}{56}$ oe	B1	ISW FT ' $\dfrac{\text{their derived } 720}{\text{their derived } 40320}$ ' providing at least B1 previously awarded in both (a) and (b).
	(5)	
22.(a) $0.5^3 + 0.5 - 1\ (= -0.375) < 0$ AND $0.75^3 + 0.75 - 1\ (= 0.171875) > 0$ OR $1^3 + 1 - 1\ (= 1) > 0$ AND $0.75^3 + 0.75 - 1\ (= 0.171875) > 0$	B2	Allow rounded or truncated values, but must show or indicate a sign change convincingly B1 for any one of: $0.5^3 + 0.5 - 1 < 0$ $0.75^3 + 0.75 - 1 > 0$ $1^3 + 1 - 1 > 0$
(b) 0.625	B1	0.625 must be written in the answer space or the interval 0.625 to 0.75 clearly implied
(c) Uses 0.6875 leading to interval (0.625, 0.6875)	M1	
Uses 0.65625 leading to interval (0.65625, 0.6875) and correct conclusion	A1	Allow the A1 if they continue with more intervals or fail to conclude with x = 0.7 to 1d.p.
	(5)	

10

23. (a) $\dfrac{9}{4-x}$	B1	Allow $\dfrac{7}{x}+5$
(b) $\dfrac{9}{4-x}=\dfrac{7}{x}+5$ oe	M1	FT 'their $\dfrac{9}{4-x}$' provided of the form $\dfrac{a}{bx+c}$ Equates correct or correct FT expressions
$9x = 7(4-x) + 5x(4-x)$ oe	m1	Clears fractions e.g. $9x=(7+5x)(4-x)$; may be in stages
$9x = 28 - 7x + 20x - 5x^2$ oe	m1	Multiplies out
$9x = 28 + 13x - 5x^2$ oe	m1	Collects terms on RHS oe
Correct completion to given answer $5x^2 - 4x - 28 = 0$	A1	Not from wrong working
(c) $(5x-14\ )(x+2)$	M2	M1 for $(5x\ ...14\ )(x\ ...\ 2)$ Must be seen
$x = 2.8$ (or $x = -2$)	A1	CAO Allow if working solution seen in (b) and not contradicted in (c). *Using trial and improvement* *Award B3 for a method leading to both solutions, namely x = –2 AND x = 2·8, otherwise B0.*
$\left(\dfrac{7}{2.8}=\right)(\pounds)2.5(0)$	B1	FT 'their derived positive value of *x providing two solutions with one positive and one negative si* Allow this mark if the quadratic has been solved on the calculator (M0 A0 previously awarded).
Alternative method: $x = \dfrac{-(-4) \pm \sqrt{(-4)^2 - 4\times 5 \times -28}}{2\times 5}$ *oe*	M1	*Must be seen; allow one slip in substitution for M1 m0 A0; formula must not be clearly incorrect.* *If the –(–4) not clearly included in the fraction then M0 unless corrected later.* *Award M1 mo A0 for missing brackets on the -4² unless corrected but allow use of 4².* *Allow attempt to complete the square with at most one slip*
$x = \dfrac{4 + \sqrt{576}}{10}$ *(or $x = \dfrac{4 - \sqrt{576}}{10}$) oe*	m1	
$x = 2.8$ *(or $x = -2$)*	A1	*CAO* *Allow is working solution seen in (b) and not contradicted in (c)*
$\left(\dfrac{7}{2.8}=\right)(\pounds)2.5(0)$	B1	*FT 'their derived positive value of x', providing two solutions with one positive and one negative si* *Allow this mark if the quadratic has been solved on the calculator (M0 A0 previously awarded)*
	(10)	

11

24.			Degree symbol may be omitted throughout
$\sin(...) = 0.7\dfrac{45.0\times 2}{12.5\times 9.4}$ oe		M2	M1 for $\dfrac{1}{2}\times 12.5\times 9.4\times \sin ABC = 45.0$ oe
A$\hat{\text{B}}$C = 49.9(922...)° (= 50°)		A1	If M0 awarded, then:
			SC2 for $\dfrac{1}{2}\times 12.5\times 9.4\times \sin 50 = 45(.005...)$
			or SC1 for $\dfrac{1}{2}\times 12.5\times 9.4\times \sin 50$
Alternative method for the first 3 marks *(Perp height from C to AB =)* *45 × 2 ÷ 12.5 oe*		M1	*Allow for appropriate sight of 7.2 (cm)*
$sin\,A\hat{B}C\ =\ \dfrac{7.2}{9.4}$		M1	
A$\hat{B}$C = 49.9(922...) ° (= 50°)		A1	
$AC = \sqrt{12.5^2 + 9.4^2 - 2\,(12.5)(9.4)\cos 50}$		M2	Accept answers in range $\sqrt{93.2}$ to $\sqrt{93.6}$
			M1 for $AC^2 = 12.5^2 + 9.4^2 - 2\,(12.5)(9.4)\cos 50$ implied by 93.2 to 95.6
AC = 9.67 to 9.7 (cm) si		A1	Allow 10 cm from correct working Allow A1 for $\sqrt{93.2}$ to $\sqrt{93.6}$
$\sin A\hat{D}C = \dfrac{9.67...\times \sin 85}{10.2}$ (=0.9446…) oe		M2	FT 'their 9.67...'
			M1 for $\dfrac{9.67...}{\sin ADC} = \dfrac{10.2}{\sin 85}$ oe
Accept answers in range 70.8° to 71.33°		A1	CAO
		(9)	