# wjec cbac

## **GCSE MARKING SCHEME**

**SUMMER 2023** 

GCSE MATHEMATICS UNIT 2 – FOUNDATION TIER 3300U20-1 PMT

#### INTRODUCTION

This marking scheme was used by WJEC for the 2023 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.

#### PMT

### WJEC GCSE MATHEMATICS

#### SUMMER 2023 MARK SCHEME

Unit 2: Foundation Tier	Mark	Comments
1.(a) 15214	B1	
1.(b) 5	B1	Allow embedded answers.
1.(c) 824	B1	
2.(a) certain	B1	
2.(b) impossible	B1	
2 (c) unlikely	B1	
3(a) 12 42	B2	B2 for the two correct fractions circled with no
19 79	02	incorrect fractions circled
13 13		B1 for one of the following:
		<ul> <li>one fraction circled which is correct</li> </ul>
		• One fraction circled, which is correct.
		• two fractions circled, one of which is correct.
	D4	• Infee fractions circled, two of which are correct.
3.(b) 4 boxes snaded	BI D4	
4.(a) cylinder	B1	
4.(b) (regular) pentagon	B1	
4.(c) parallelogram	B1	
5. 11 13 15 17 20 22 29	M1	For arranging the 7 numbers in ascending or
or 29 22 20 17 15 13 11		descending order
(Median =) 17	A1	
6.	54	Answer space takes precedence.
a = 30	B1	CAO
L - 17	D1	$\Gamma T = 107 - 2 \times 4 \text{ their }^2$
b = 17	ы	F.I. $107 - 3 \times \text{their } a$
a <b>- 10</b>	D1	F T 57 (their <i>b</i> )
ε - 40		1.1. $57 - \text{then } b$
<i>d</i> = 13	B1	Strict F.T. 100 – 'their $a'$ – their $b'$ – 'their $c'$
7.(a) acute	B1	
7.(b) square	B1	
8 (a)(i) subtract eleven (from the previous term)	B1	Accept 'take away 11' '- 11' or '73 - 11n'
		B0 for $n - 11$
8 (a)(ii) multiply (previous term) by four	B1	Accept 'times by 4' or 'x 4'
		B0 for $n \times 4$
(a + b)(i) (r = 31	B1	Accent embedded answers unless contradicted
8 (b)(i) (w =) 103 1	B1	Accept embedded answers, unless contradicted
9(a) 3 x 142 OR (142 ÷ 8) x 3	M1	
8	IVII	
= 53 25 ISW	Δ1	
00.20 10 11		Award M1 A0 for one of the following:
		213
		4
		• $53\frac{1}{4}$
		• $426 \div 8$
		An unsupported 53 3
9 (b) 17 16 ISW	R1	
	יט	1

or (number of blue discs = $3/5 \times 10 = 9$ 6(Total number of discs = $10 + 10 = 20$ B1May be seen in the denominator of their answer. Implied by number of red discs = $4$ AND number of blue discs = $16$ . F.T. Their number of red discs.(Probability of a red disc =) $\frac{4}{20}$ ISWB1F.T. 'their number of red discs' provided < 1. $20$ Award B1 B1 B1 for an unsupported final answer of $4/20$ or equivalent.10. Atternative method (Probability of a red disc =) $2/5 \div 2$ M22/10ISWA110. Organisation and CommunicationOC1For OC1, candidates will be expected to: • present their response in a structured way • explain to the reader what they are doing at each step of their response • lay out their explanation and working in a way that is clear and logical • write a conclusion that draws together their results and explains what their answer means.Accuracy of writingW1For W1, candidates will be expected to: • show all their working • use appropriate terminology, units, etc.11.(a) $(x =) 360 - (115 + 97 + 42)$ or equivalent. $= 106$ M1 $(x =) 360 - (115 + 97 + 42)$ or equivalent. $= 106$ M1 $(x =) 360 - (115 + 97 + 42)$ or equivalent. $= 106$ M1 $(x =) 360 - (115 + 97 + 42)$ or equivalent. $= 106$ M1 $(x =) 360 - (115 + 97 + 42)$ or equivalent. $= 106$ M1 $(x =) 360 - (115 + 97 + 42)$ or equivalent. $= 106$ M1 $(x =) 360 - (115 + 97 + 42)$ or equivalent. $= 106$ M1 $(x =) 360 - (115 + 97 + 42)$ or equivalent. $= 106$ M1 $(x =) 360 - (115 + 97 + 42)$ or equivalent. $= 106$ <	10. (Number of red discs = 2/5 × 10 =) 4	B1	Allow 4/10 or '4 out of 10'
(Total number of discs = 10 + 10 =) 20B1May be seen in the denominator of their answer. Implied by number of red discs = 4 AND number of blue discs = 16, F.T. 'their number of red discs'.(Probability of a red disc =) $\frac{4}{20}$ ISWB1F.T. 'their number of red discs'. 2010. Atternative method (Probability of a red disc =) $2/5 \div 2$ M2 $2/10$ ISWA110. Organisation and CommunicationOC1For OC1, candidates will be expected to: • present their response in a structured way • explain to the reader what they are doing at each step of their response • lay out their explanation and working in a way that is clear and logicalAccuracy of writingW1For W1, candidates will be expected to: • present their response in a structured way • explain to the reader what they are doing at each step of their response • lay out their explanation and working in a way that is clear and logical11.(a) $(x =) 360 - (115 + 97 + 42)$ or equivalent. $= 106$ M1 A111.(b) $y = 180 - 78$ $2$ M1 $y = 180 - 78$ $2$ M1 $z = 51$ A1 A112.(a) $\frac{1}{6}$ 12.(a) $\frac{1}{6}$			or (number of blue discs = $3/5 \times 10 =$ ) 6
Implied by number of red discs = 4 AND number of blue discs = 16, F.T. 'their number of red discs'.(Probability of a red disc =) $\frac{4}{20}$ ISWB1F.T. 'their number of red discs' provided < 1. $\frac{20}{20}$ Award B1 B1 B1 for an unsupported final answer of $\frac{4/20}{4/20}$ or equivalent.10. <u>Alternative method</u> (Probability of a red disc =) $2/5 \neq 2$ M22/10ISWA110. Organisation and CommunicationOC1For OC1, candidates will be expected to: • present their response in a structured way • explain to the reader what they are doing at each step of their response • lay out their explanation and working in a way that is clear and logical • write a conclusion that draws together their results and explains what their answer means.Accuracy of writingW1For W1, candidates will be expected to: • show all their working • use correct mathematical form in their working • use correct mathematical form in their working = 10611.(a) $(x = ) 360 - (115 + 97 + 42)$ or equivalent. $= 106$ M1 A1At $A1$ At $A2$ <td>(Total number of discs = 10 + 10 =) 20</td> <td>B1</td> <td>May be seen in the denominator of their answer.</td>	(Total number of discs = 10 + 10 =) 20	B1	May be seen in the denominator of their answer.
Image: the transformation of the transformatic transformation of the tr			Implied by number of red discs = 4 AND number of blue discs = 16. E.T. 'their number of red discs'
(Probability of a red disc =)4 20ISW 20B1F.T. their number of red discs: 20 			
Award B1 B1 B1 Tor an unsupported final answer of 4/20 or equivalent.10. Alternative method (Probability of a red disc =) 2/5 $\pm 2$ M22/10ISWA110. Organisation and CommunicationOC1For OC1, candidates will be expected to: • present their response in a structured way • explain to the reader what they are doing at each step of their response in a structured way • explain to their explanation and working in a way that is clear and logical • write a conclusion that draws together their results and explains what their answer means.Accuracy of writingW1For W1, candidates will be expected to: • show all their working • make few, if any, errors in spelling, punctuation and grammar • use correct mathematical form in their working • use appropriate terminology, units, etc.11.(a) $(x =) 360 - (115 + 97 + 42)$ or equivalent. $= 106$ M1 A1 A111.(b) $y = 180 - 78$ $2$ M1 $2$ 11.(b) $y = 180 - 78$ $2$ M1 $2$ 12.(a) $\frac{1}{6}$ B1	(Probability of a red disc =) $\frac{4}{20}$ ISW	B1	F.T. <u>'their number of red discs'</u> provided < 1. 20
10. Alternative method       (Probability of a red disc =) $2/5 \neq 2$ M2         2/10       ISW       A1         10. Organisation and Communication       OC1       For OC1, candidates will be expected to: • present their response in a structured way • explain to the reader what they are doing at each step of their response         Accuracy of writing       W1       For W1, candidates will be expected to: • show all their environment of logical         Accuracy of writing       W1       For W1, candidates will be expected to: • show all their working         M1. (a)       (x =) $360 - (115 + 97 + 42)$ or equivalent. = $106$ M1         M1. (a) $y = \frac{180 - 78}{2}$ M1         M1. (b) $y = \frac{180 - 78}{2}$ M1 $y = \frac{160 - 78}{2}$ M1       Check diagram for answer. Note: $\frac{102}{2}$ M2       A1       Note: Award M1A1 for a correct embedded answer BUT only M1A0 if contradicted by $x \neq 106$ .         11.(a) $y = \frac{180 - 78}{2}$ M1         Note: $\frac{102}{2}$ A1         Note: $\frac{102}{2}$ N1         Note: $\frac{102}{2}$ N1         Note: $\frac{102}{2}$ N1         Note: Award M1A1 for a correct embedded answer BUT only M1A0 if contradicted by $y \neq 51$ .         12.(a) $\frac{1}{6}$ B1			Award B1 B1 B1 for an unsupported final answer of 4/20 or equivalent.
(Probability of a red disc =) $2/5 \neq 2$ $M2$ $2/10$ ISWA110. Organisation and CommunicationOC1For OC1, candidates will be expected to: • present their response in a structured way • explain to the reader what they are doing at each step of their response • lay out their explanation and working in a way that is clear and logical • write a conclusion that draws together their results and explains what their answer means.Accuracy of writingW1For W1, candidates will be expected to: • show all their working • use correct mathematical form in their working • use correct mathematical form in their working • use appropriate terminology, units, etc.11.(a) $(x =) 360 - (115 + 97 + 42)$ or equivalent. $= 106$ M1 A111.(b) $y = \frac{180 - 78}{2}$ M1 $= 51$ $y = \frac{180 - 78}{2}$ M1 A1 $x = 21$ A1 $x = 21$ A1 $x = 21$ A1 $x = 21$ A1 $x = 100$ M1 $x \neq 106$ . $x = 100$ M1 $x \neq 106$ $x = 100$ M1 	10. <u>Alternative method</u>		
2/10ISWA110. Organisation and CommunicationOC1For OC1, candidates will be expected to: 	(Probability of a red disc =) $2/5 \div 2$	М2	
10. Organisation and Communication       OC1       For OC1, candidates will be expected to: <ul> <li>present their response in a structured way</li> <li>explain to the reader what they are doing at each step of their response</li> <li>lay out their explanation and working in a way that is clear and logical</li> <li>write a conclusion that draws together their results and explains what their answer means.</li> </ul> Accuracy of writing         W1         For W1, candidates will be expected to: <ul> <li>show all their working</li> <li>make few, if any, errors in spelling, punctuation and grammar</li> <li>use correct mathematical form in their working</li> <li>use correct mathematical form in their working</li> <li>use appropriate terminology, units, etc.</li> </ul> 11.(a)         (x =) 360 - (115 + 97 + 42) or equivalent. = 106         M1           Area         M1         Check diagram for answer.           Note: Award M1A1 for a correct embedded answer BUT only M1A0 if contradicted by $x \neq 106$ .         Note: Award M1A1 for a correct embedded answer BUT only M1A0 if or a sight of 78 + y + y = 180.           11.(b) $y = \frac{180 - 78}{2}$ M1         Check diagram for answer. $z = 51$ A1         Note: Award M1A1 for a correct embedded answer BUT only M1A0 if contradicted by $y \neq 51$ .           12.(a) $\frac{1}{6}$ B1         Note: Award M1A1 for a correct embedded answer BUT only M1A0 if contradicted by $y \neq 51$ .	2/10 ISW	A1	
Accuracy of writingW1For W1, candidates will be explain to the reader what they are doing at each step of their response • lay out their explanation and working in a way that is clear and logical • write a conclusion that draws together their results and explains what their answer means.Accuracy of writingW1For W1, candidates will be expected to: • show all their working • make few, if any, errors in spelling, punctuation and grammar • use correct mathematical form in their working • use appropriate terminology, units, etc.11.(a) $(x = ) 360 - (115 + 97 + 42)$ or equivalent. $= 106$ M1 A1Check diagram for answer. Note: $360 - 254$ 11.(b) $y = \frac{180 - 78}{2}$ M1 $= 51$ Check diagram for answer. Note: $\frac{1002}{2}$ Award M1A1 for a correct embedded answer BUT only M1A0 if contradicted by $x \neq 106$ .12.(a) $\frac{1}{6}$ B1	10. Organisation and Communication	OC1	For OC1, candidates will be expected to:
Accuracy of writingW1For W1, candidates will be expected to: • show all their working • show all their working • show all their working • use correct mathematical form in their working • use appropriate terminology, units, etc.11.(a) $(x = ) 360 - (115 + 97 + 42) \text{ or equivalent.} = 106M1A1Check diagram for answer.Note: 360 - 254Note: 360 - 25411.(b)y = \frac{180 - 78}{2}M1= 51Check diagram for answer.Note: 360 - 102Award M1A1 for a correct embedded answerBUT only M1A0 if contradicted by x \neq 106.12.(a)\frac{1}{6}B1$			<ul> <li>explain to the reader what they are doing at</li> </ul>
Accuracy of writingW1For W1, candidates will be expected to: • show all their working • make few, if any, errors in spelling, punctuation and grammar • use correct mathematical form in their working • use appropriate terminology, units, etc.11.(a) $(x =) 360 - (115 + 97 + 42)$ or equivalent. $= 106$ M1 A111.(a) $(x =) 360 - (115 + 97 + 42)$ or equivalent. $= 106$ M1 A111.(b) $y = \frac{180 - 78}{2}$ M1 $= 51$ Check diagram for answer. Note: Award M1A1 for a correct embedded answer BUT only M1A0 if contradicted by $x \neq 106$ .11.(b) $y = \frac{180 - 78}{2}$ M1 $= 51$ Check diagram for answer. Note: 102 $2$ Award M1A1 for a correct embedded answer BUT only M1A0 if contradicted by $y \neq 51$ .12.(a) $\frac{1}{6}$ B1			each step of their response
Accuracy of writingW1• write a conclusion that draws together their results and explains what their answer means.Accuracy of writingW1For W1, candidates will be expected to: • show all their working • make few, if any, errors in spelling, punctuation and grammar • use correct mathematical form in their working • use appropriate terminology, units, etc.11.(a) $(x =) 360 - (115 + 97 + 42) \text{ or equivalent.} = 106M1A1Check diagram for answer.Note: 360 - 25411.(b)y = \underline{180 - 78}= 51M1A1Check diagram for answer.Note: Award M1A1 for a correct embedded answerBUT only M1A0 if contradicted by x \neq 106.11.(a)y = \underline{180 - 78}= 51M1A1Check diagram for answer.Note: \underline{102}2Award M1 for sight of 78 + y + y = 180.Note: Award M1A1 for a correct embedded answerBUT only M1A0 if contradicted by y \neq 51.12.(a)\frac{1}{6}B1$			<ul> <li>lay out their explanation and working in a way that is clear and logical</li> </ul>
Accuracy of writingW1For W1, candidates will be expected to: • show all their working • make few, if any, errors in spelling, punctuation and grammar 			• write a conclusion that draws together their
Accuracy of writingW1For W1, candidates will be expected to: • show all their working • make few, if any, errors in spelling, punctuation and grammar • use correct mathematical form in their working • use appropriate terminology, units, etc.11.(a) $(x =) 360 - (115 + 97 + 42)$ or equivalent. $= 106$ M1 A1Check diagram for answer. Note: $360 - 254$ 11.(b) $y = \frac{180 - 78}{2}$ M1 $= 51$ Check diagram for answer. Note: $\frac{102}{2}$ Award M1 for sight of $78 + y + y = 180$ .12.(a) $\frac{1}{6}$ B1			results and explains what their answer means.
$y = \frac{180 - 78}{2}$ $= 51$ $12.(a)$ $\frac{12.(a)}{12.(a)}$ $\frac{1}{6}$ $x = 360 - (115 + 97 + 42) \text{ or equivalent.}}{11.(b)}$ $y = \frac{180 - 78}{2}$ $y = \frac{180 - 78}{2}$ $x = 360 - (115 + 97 + 42) \text{ or equivalent.}}{11.(b)}$ $y = \frac{180 - 78}{2}$ $x = 360 - (115 + 97 + 42) \text{ or equivalent.}}{11.(b)}$ $y = \frac{180 - 78}{2}$ $x = 51$	Accuracy of writing	W1	For W1, candidates will be expected to:
$y = \frac{180 - 78}{2}$ $= 51$ $12.(a)$ $\frac{11.(a)}{12.(a)}$ $\frac{12.(a)}{16}$ $\frac{11.(b)}{12.(a)}$ $\frac{11.(b)}{12.(b)}$ $\frac{11.(b)}{1$			show all their working
Image: 11.(a). use correct mathematical form in their working . use appropriate terminology, units, etc.11.(a) $(x =) 360 - (115 + 97 + 42)$ or equivalent. $= 106$ M1 A1Check diagram for answer. Note: $360 - 254$ 11.(b) $y = \frac{180 - 78}{2}$ M1 A1Check diagram for answer. Note: Award M1A1 for a correct embedded answer BUT only M1A0 if contradicted by $x \neq 106$ .11.(b) $y = \frac{180 - 78}{2}$ M1Check diagram for answer. Note: $\frac{102}{2}$ Award M1 for sight of $78 + y + y = 180$ .12.(a) $\frac{1}{6}$ B1			<ul> <li>make rew, if any, errors in spelling, punctuation and grammar</li> </ul>
working • use appropriate terminology, units, etc.11.(a) $(x =) 360 - (115 + 97 + 42) \text{ or equivalent.} = 106M1A1Check diagram for answer.Note: 360 - 25411.(b)y = \frac{180 - 78}{2}M1Check diagram for answer.Note: Award M1A1 for a correct embedded answer.Note: \frac{102}{2}Award M1 for sight of 78 + y + y = 180.12.(a)\frac{1}{6}B1$			use correct mathematical form in their
11.(a) $(x =) 360 - (115 + 97 + 42) \text{ or equivalent.} = 106M1A1Check diagram for answer.Note: 360 - 25411.(b)y = \frac{180 - 78}{2}M1A1Check diagram for answer.Note: Award M1A1 for a correct embedded answer.Note: \frac{102}{2}Award M1 for sight of 78 + y + y = 180.11.(b)= 51A1Note: Award M1A1 for a correct embedded answer.Note: \frac{102}{2}Award M1 for sight of 78 + y + y = 180.12.(a)\frac{1}{6}B1$			<ul> <li>working</li> <li>use appropriate terminology, units, etc.</li> </ul>
(x =) 360 - (115 + 97 + 42)  or equivalent. = 106 $M1$ $A1$ $M1$ $A1$ $Note: 360 - 254$ $Note: 3$	11 (a)		Check diagram for answer
= 106 $A1$ Note: Award M1A1 for a correct embedded answer BUT only M1A0 if contradicted by $x \neq 106$ . $11.(b)$ $y = \frac{180 - 78}{2}$ $= 51$ $M1$ $A1$ Note: $\frac{102}{2}$ Award M1 for sight of $78 + y + y = 180$ . $A1$ Note: Award M1A1 for a correct embedded answer BUT only M1A0 if contradicted by $y \neq 51$ . $12.(a)$ $\frac{1}{6}$ $B1$	(x =) 360 - (115 + 97 + 42) or equivalent.	M1	Note: 360 – 254
Note: Award M1A1 for a correct embedded answer BUT only M1A0 if contradicted by $x \neq 106$ .11.(b) $y = \frac{180 - 78}{2}$ M1Check diagram for answer. Note: $\frac{102}{2}$ Award M1 for sight of $78 + y + y = 180$ .= 51A1Note: Award M1A1 for a correct embedded answer BUT only M1A0 if contradicted by $y \neq 51$ .12.(a) $\frac{1}{6}$ B1	= 106	A1	
BUT only M1A0 if contradicted by $x \neq 106$ . 11.(b) $y = \frac{180 - 78}{2}$ $= 51$ M1 Check diagram for answer. Note: $\frac{102}{2}$ Award M1 for sight of 78 + y + y = 180. A1 Note: Award M1A1 for a correct embedded answer BUT only M1A0 if contradicted by $y \neq 51$ . 12.(a) $\frac{1}{6}$ B1			Note: Award M1A1 for a correct embedded answer
11.(b) $y = \frac{180 - 78}{2}$ M1Check diagram for answer. Note: $\frac{102}{2}$ Award M1 for sight of $78 + y + y = 180$ . $= 51$ A1Note: Award M1A1 for a correct embedded answer BUT only M1A0 if contradicted by $y \neq 51$ .12.(a) $\frac{1}{6}$ B1			BUT only M1A0 if contradicted by $x \neq 106$ .
$y = \frac{180 - 78}{2}$ $= 51$ $12.(a) \qquad \frac{1}{6}$ $M1 \qquad Note: \frac{102}{2}$ $Award M1 \text{ for sight of } 78 + y + y = 180.$ $A1 \qquad Note: Award M1A1 \text{ for a correct embedded answer}$ $BUT \text{ only M1A0 if contradicted by } y \neq 51.$	11.(b)		Check diagram for answer.
= 51 $= 51$	$y = \frac{180 - 78}{2}$	M1	Note: <u>102</u> 2
$= 51$ A1 Note: Award M1A1 for a correct embedded answer BUT only M1A0 if contradicted by $y \neq 51$ . 12.(a) $\frac{1}{6}$ B1			Award M1 for sight of $78 + y + y = 180$ .
Note: Award M1A1 for a correct embedded answer BUT only M1A0 if contradicted by $y \neq 51$ .12.(a) $\frac{1}{6}$ B1	= 51	A1	
12.(a) $\frac{1}{6}$ B1			Note: Award M1A1 for a correct embedded answer
12.(a) <u>1</u> 6			BUT ONLY WITAU II CONTRADICTED by $y \neq 51$ .
	12.(a) <u>1</u>	B1	

12.(b)	31 43 47	B2	<ul> <li>Answer space takes precedence.</li> <li>Award B2 for all three primes.</li> <li>Accept in any order.</li> <li>Award B1 for two correct primes.</li> <li>If no answers given on answer spaces, and numbers given are circled/clearly indicated, award B1 for one of the following: <ul> <li>two correct primes provided no more than 3 numbers selected</li> <li>all 3 primes and 1 incorrect number if 4 numbers selected.</li> </ul> </li> </ul>
13.			Answer space takes precedence.
	Isaac <b>36</b>	B1	CAO
	Nadia <b>12</b>	B1	FT ⅓ of 'their Isaac'. Allow truncation or rounding where a whole number does not result on FT.
	Dewi <b>24</b>	B1	<ul><li>FT 2 × 'their Nadia'.</li><li>Allow truncation or rounding where a whole number does not result on FT.</li><li>If no answers are given on answer space, ages must explicitly be identified as a final answer for a possible B1B1B1.</li></ul>
14.(a)	-2 (+)4	B2	Award B1 for one of the following:
			<ul> <li>-2</li> <li>'their -2' + 6 evaluated correctly provided 'their -2' is negative.</li> </ul>
14.(b)	0·7 or equivalent	B2	<ul> <li>Mark final answer.</li> <li>Award B2 for unsupported 0.7 or not from incorrect working.</li> <li>Award B1 for one of the following: <ul> <li>sight of (+)27.9 (not (+)27.9g and not -27.9(g))</li> <li>sight of -27.2 (not -27.2h)</li> <li>0.7 (with additional letters)</li> <li>a final answer of 55.1 (27.9 implied).</li> </ul> </li> </ul>

Correctly drawn pie chart within tolerance AND correctly labelled Red = 72(°) (allow 70° to 74°) Green = 108(°) (allow 106° to 110°) 10. $45$ or equivalent 1.25	B3	Award B2 for one of the following: • correctly drawn pie chart within tolerance but not labelled or incorrectly labelled • pie chart drawn within tolerance but not a straight line • pie chart drawn not starting from the centre (but end point within tolerance) • sight of red = 72(°) • sight of green = 108(°). Award B1 for sight of one of the following: • 72(°) • 108(°) • (red=) <u>2</u> × 360 or equivalent 10 • (red=) <u>2</u> × 180 or equivalent 5 • (green=) <u>3</u> × 360 or equivalent 10 • (green=) <u>3</u> × 180 or equivalent 0 • (their <b>derived</b> 72' and 'their <b>derived</b> 108' drawn correctly, provided that 'their 72' + 'their 108' = 180 and identified as red and green, and not 90°. Must be a complete and correct method
1.52		Award M1 for sight of one of the following: • $45 - 5$ • $39 \cdot 13(0)$ • $45 - 5$ • $0 \cdot 6$
36 (mph)	A1	CAO.
17. (Volume of cuboid = $4 \times 5 \times 20$ =) 400 (cm <sup>3</sup> )	B1	Award B0 if 400 has come from incorrect working or if subsequent working is seen (e.g. finding the total surface area or $4 \times 5 \times 20 = 400, 400 \times 2 = 800$ )
(Volume of cube = $3 \times 3 \times 3 =$ ) 27 (cm <sup>3</sup> )	B1	$3011000 \times 2 = 000 $
(Number of cubes = ) $\frac{4 \times 5 \times 20}{3 \times 3 \times 3}$ or equivalent	M1	FT 'their 400' ÷ 'their 27', provided 'their 27' ≠ 3 and that <b>B1 has previously been awarded</b> or 4 × 5 × 20 and 3 × 3 × 3 seen.
= 14·8()	A1	May be implied in the final answer.
(Number of complete cubes = ) 14	B1	FT only if truncation required. If $\frac{4 \times 5 \times 20}{3 \times 3 \times 3}$ = 14 (complete cubes) is seen, then
		award B1 B1 M1 A1 B1.

18.(a)(i)	235(°)	B1	
18.(a)(ii)	055(°)	B1	B0 for 55(°)
18.(b)	P and S	B1	Ignore any sketches (correct or incorrect). Accept in any order. Allow (00)5(°) and 355(°).
19.(a)	Lang History 13 18 7 5		Diagram takes precedence. If 'notches/tallies' are used, penalise −1 once.
	5 AND 18 in correct position.	B1	<ul> <li>Award B0 for one of the following:</li> <li>any other number written in the same section</li> <li>4 and 1 written for 5.</li> </ul>
	Total of 25 for <i>History</i> .	B1	FT 'their 7' + 'their 18', provided both sections are non-zero and no section is blank.
	Overall total of 43	B1	FT 'their 13' + 'their 18'+ 'their 7' + 'their 5' provided all sections are non-zero and no section is blank.
			Note: The following answers are awarded $\overbrace{1825}^{Lang}_{B1B0B0}$
19.(b)			For B2 or B1, the numerator and denominator must both be whole numbers.
	31/43 or equivalent. ISW	B2	For B2, accept: • $72 \cdot 0(9)\%$ or $0 \cdot 720(9)$ . • $72 \cdot 1\%$ or $0 \cdot 721$ • $72\%$ or $0 \cdot 72$ from correct working. FT <u>'their 13' + 'their 18'</u> provided neither section is 43 blank. Award B1 for one of the following: • a numerator of 31 in a fraction < 1 • FT 'their 13' + 'their 18', provided neither section is blank, as a numerator in a fraction < 1 • a denominator of 43 in a fraction < 1. An answer of <u>31</u> gains B2 regardless of 'their 43 Venn diagram'. Penalise incorrect notation (e.g. '31 in 43') -1.