EDUQAS GCSE MATHEMATICS

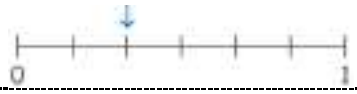
SUMMER 2024 MARK SCHEME

GCSE (9-1) Mathematics **Component 1: Foundation Tier**	**Mark**	**Comment**
1.(a) 0·2 OR $\frac{2}{10}$ oe	B1	Accept two tenth(s). Allow tenth(s) but not 0·1.
1.(b) 33 000	B1	
1.(c) 64	B1	
1.(d) 21	B1	
1.(e) 0·61	B1	
1.(f) –7·5 –7 3·2 5	B1	
1.(g) –4 is less than x.	B1	Accept x is greater than -4. Allow equivalent wording to less/greater than.
	(7)	
2.(a) 5	B1	Allow ‘5 out of 10’.
2.(b) 0	B1	Allow ‘none’ or ‘0 out of 10’.
2.(c) 1	B1	Allow ‘1 out of 10’. If no marks in (a),(b) and (c), award SC1 in (c) for answers of 5/10, 0/10 and 1/10 oe.
	(3)	
3.(a) 6(%)	B1	
3.(b) 20 ÷ 5 × 3 oe =12	M1 A1	May be seen in stages. Mark final answer. Award M1A0 for a final answer of $\frac{12}{20}$.
3.(c) 50 ÷ 10 × 7 oe =35	M1 A1	May be seen in stages. Mark final answer. A0 for 35%.
	(5)	

© WJEC CBAC Ltd.

4.(a) (Money left =) 180 – 40 – (2 × 15 + 3 × 10 + 2 × 12 + 3 × 7) (180 – 40 – (30 + 30 + 24 + 21)) OR 180 – 40 – (2 × (15 + 12) + 3 × (10 + 7)) (180 – 40 – 54 – 51) (180 – 145) (£)35	M3 A1	May be seen in stages. Award M2 and a possible A1 for a calculation that would be awarded M3 except for: • an error in, or omission of, one of the calculations 2 × 15, 3 × 10, 2 × 12, 3 × 7 • OR the omission of the 40 M2 (A0) for one of the following • (40 +) 2 × 15 + 3 × 10 + 2 × 12 + 3 × 7 • (40 +) + 30 + 30 + 24 + 21 (= 40 + 105) • (40 +) 2 × (15 + 12) + 3 × (10 + 7) • (40 +) + 54 + 51 (= 40 + 105) • Appropriate sight of 105 or 145 M1 for any one of the following (which may be embedded in a further (possibly incorrect) calculation): • (Tickets) 2 × 15 + 3 × 10 (= 30 + 30 = £60) • (Lunch) 2 × 12 + 3 × 7 (= 24 + 21 = £45) • (Adults) 2 × (15 + 12) (= 2 × 27 = £54) • (Children) 3 × (10 + 7) (= 3 × 17 = £51) • 180 – one of 30, 24 or 21 FT only from M2 as identified above
4.(b) 650 000 ÷ 10 oe = 65 000	M1 A1	 Mark final answer. A0 for 65 000%.
	(6)	
5.(a) $4 + y$	B1	
5.(b) 24	B1	
	(2)	
6.(a) Point correctly plotted at (5, –2)	B1	Award unlabelled if unambiguous. B0 if labelled incorrectly.
6.(b) Point correctly plotted. (1, –2) (5, 4) (0, –1) (6, 3) (0, 3) or (6, -1)	B1	Strict FT for 'their B' provided not in first quadrant. Award unlabelled if unambiguous. Allow incorrect labelling provided the points form a right-angled triangle.
6.(c) (3, 1)	B2	Strict FT for 'their B' <u>provided not in first quadrant</u>. B1 for either of the following: • one correct coordinate, • a clear indication of the correct position of the midpoint of *AB*. If no marks, award SC1 for either: • reversed coordinates - (1, 3) or on FT • the correct coordinates of their midpoint for 'their B' in the first quadrant, provided 'their B' is not (1, p) or (q, 4).
	(4)	

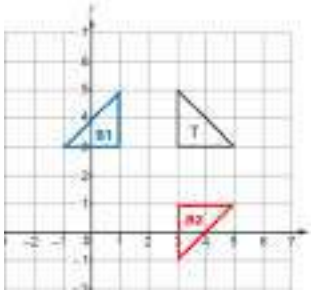
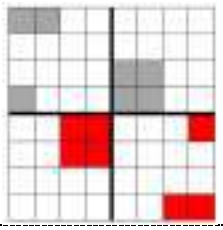
© WJEC CBAC Ltd.

7.(a) B	B1	
7.(b)(i)  	B1	Allow any unambiguous indication.
7.(b)(ii) $\frac{1}{6}$	B1	B0 for '1 out of 6' oe.
7.(c) 2 : 3	B1	
	(4)	
8.(a) $12wy$ OR $12yw$	B1	
8.(b) Any two terms with a difference of 5*f* e.g. 6*f* and (1)*f*	B1	Allow 5*f* and 0(*f*) OR 0(*f*) and –5*f* B0 if either space is blank.
8.(c)(i) (x =) 8	B1	Allow B1 for embedded answers provided not contradicted. e.g. B1 for 6 × 8 = 48. B0 for 6 × 8 = 48 x = 48.
8.(c)(ii) (a =) 160	B1	Allow B1 for embedded answers provided not contradicted.
8.(d) (150 – 20) ÷ 15 8 (days)	M2 A1	May be seen in stages. M2 may be implied by one of the following: • 130 ÷ 15 • 20 + 15 × 8 = 140 • 20 + 15 × 8 AND 20 + 15 × 9 • 150 – 20 = 130 with 8 × 15 = 120 M1 for one of the following: • 20 + 15 × n where n > 1 (see M0) • 20 + 15 + 15 + … • 150 - 20 - 15 - 15 - .... (with at least two 15's seen) • 150 – 20 ÷ 15 (= 148.666…) M0 for either: • 20 + 15 × n = 35n e.g. multiples of 35 is M0. • 150 – 35 • 150 - 20 -15 CAO An answer of 8·6(6...) or 8 r 10 implies M2 A0. Award M0 A0 for an unsupported answer of 9.
	(7)	

© WJEC CBAC Ltd.

9.(a) Answer in the range 11·0 to 11·2 (acres)	B1	
9.(b) A clear method shown e.g. 2 × 13 acres = 2 × 5·25 hectares 14 acres + 12 acres = 5·65 + 4·85 hectares Answer in the range 10·4 to 10·6 (hectares)	M1 A1	Allow ± 0·05 in their readings for the M1 if the method is clear.
	(3)	
10. No indicated or unambiguously implied, with convincing reason e.g. • she can buy 25 not 24. • 25 is not double 12.	B2	B1 for any one of the following: • 12 (candles) cost £36 • she can buy 12 candles (for £38). • 24 (candles) cost £36 • 25 (candles) cost £37.50 • she can buy 25 candles (for £38).
	(2)	
11.(a) 73 (minutes)	B2	ISW if 73 minutes seen and spoilt (e.g. converting to hours and minutes). B1 for one of the following: • 1 hour 13 minutes • 1·13 • 1:13 • working to calculate the difference between 19:48 and 21:01 in minutes e.g. 12 + 60 + 1 OR 60 + 13 B0 for 113 (minutes) or 1 hour 53 minutes from 21.01 – 19.48 = 1·53.
11.(b) 4 (minutes)	B3	B2 for correct arrival time at the event (19:49 or 7:49) B1 for selecting the correct train (18:43 or 6:43). Allow if unambiguously seen in table. May be implied by an answer of '8 minutes early' or appropriate sight of 19:37 or 7:37. If no marks, award SC1 for a final answer of 37 minutes (from the use of 19:18 train).
	(5)	
12.(a) 1 : 4 : 2	B2	B1 for sight of 4 : 16 : 8 or 2 : 8 : 4 oe

© WJEC CBAC Ltd.

12.(b) Correct explanation e.g. 'she hasn't considered one length was in m and the other length was in cm'.	E1	Accept 'it should be 20 : 3'. Allow • 'they have different units' • 'they should be in the same units' • 'it should be 100 : 15' • 'it should be 1 : 0·15' • 'she has not converted from metres to cm' • '1 m = 100 cm' • '2 m = 200 cm' • 'cm and m are different things' • 'the conversion between m and cm is not correct' Accept equivalent wording. Do not allow 'she has just simplified the numbers'. Do not ignore contradictory comments or incorrect working.
	(3)	
13.(a)  	B2	B1 for one of the following: • sight of the line $y = 2$ only. • reflection in the line $x = 2$ • the correct three points plotted but not joined B0 if more than one triangle drawn or reflection in an axis.
13.(b) 	B2	B1 for one correct quadrant.
	(4)	
14.(a) 52 × 2.5 oe 130 (miles)	M1 A1	May be seen in stages.
14.(b) 3 × 200 000 ÷ 100 ÷ 1000 oe 6 (km)	M2 A1	May be seen in stages. M1 for sight of any one of the following: • 3 × 200 000 (cm) • 600 000 • 1 cm represents 2 km • 3 × 2000 (m) Allow this M1 for use of incorrect units. e.g. 3 × 200 = 600 (m) CAO
	(5)	

© WJEC CBAC Ltd.

15.(a) $a(3 + 7b)$	B1	
15.(b) $y + 4 = 5w$ OR $-5w = -4 - y$ OR $\frac{y}{5} = \frac{5w}{5} - \frac{4}{5}$ $\frac{y + 4}{5} = w$ OR $w = \frac{-4 - y}{-5}$ OR $w = \frac{y}{5} + \frac{4}{5}$	B1 B1	May be implied by a correct answer with no incorrect working seen. FT only from $5w = \pm y \pm 4$, stated or implied. Mark final answer. If no marks, allow B1B0 for any one of the following final answers: • $w = (y + 4) \div 5$ (calculation not an expression) • $w = y + 4 \div 5$ • $\frac{y + 4}{5}$ ('$w =$' missing)
	(3)	
16. A$\hat{C}$B = 60(º) or A$\hat{B}$C = 60(º) or B$\hat{A}$C = 60(º) AND A$\hat{C}$D = 120(º) AND A$\hat{D}$C = 30(º) A correctly labelled and explained solution A$\hat{C}$B = 60(º) equilateral triangle A$\hat{C}$D = 120(º) angles on a straight line A$\hat{D}$C = 30(º) angles in an isosceles triangle (so x = 150º) OR starting with the 150(º) A$\hat{D}$C = 30(º) angles on a straight line A$\hat{C}$D = 120(º) angles in an isosceles triangle A$\hat{C}$B = 60(º) so ABC is an equilateral triangle OR working from both side A$\hat{C}$B = 60(º) as an equilateral triangle A$\hat{D}$C = 30(º) angles on a straight line A$\hat{C}$D = 120(º) angles in an isosceles triangle AND 120 + 60 = 180 angles on a straight line	B2 E2	Angles may be seen on diagram. B1 for any two of the three angles 30(º), 120(º) and 60(º) E2 and E1 dependent on B2 being awarded. Accept A$\hat{C}$B = 60(º) as all angles (in ABC) are equal/60º' Accept A$\hat{D}$C = 30(º) as two angles (in ACD) are equal' E1 for either: • full explanations but incorrect labelling e.g. C = 120(º) or BDC = 120(º) • correct labelling but one explanation missing or incorrect
	(4)	
17.(a) 40	B1	

© WJEC CBAC Ltd.

17.(b)(i) $\frac{1\times5}{4\times5}+\frac{3\times4}{5\times4}$ $=\frac{17}{20}$ OR 0·85	M1 A1	Or equivalent full method. CAO. Mark final answer.
17.(b)(ii) $\frac{5\times3}{6\times10}$ $(=\frac{15}{60})$ $=\frac{1}{4}$ OR 0·25	M1 A1	Or equivalent full method. CAO. Mark final answer.
	(5)	
18. Correct but unsimplified equations e.g. $12 + 2x + 3 + 12 + 2x + 3 = 40$ $2(12 + 2x + 3) = 40$ or $12 + 2x + 3 = 20$ OR (AB =) $(40 - 2 \times 12) \div 2$ Correct simplified equations e.g. $4x + 30 = 40$ or $2x + 15 = 20$ or $4x + 6 = 16$ or $2x + 3 = 8$ or better OR (AB =) 8 (cm) (x =) $(16 - 6) \div 4$ or (x =) $(8 - 3) \div 2$ (x =) 2.5	M1 A1 m1 A1	 May be seen on the diagram or implied in further calculation(s) e.g. $x = (8 - 3) \div 2$. Allow the A1 for (AB =) 8 even if spoilt by e.g. $x = 8$ or $x = 4$. FT from M1 A0 only. CAO
	(4)	
19. Five numbers which satisfy all three conditions. 2, 3, 3, 5, 7 or 2, 2, 3, 6, 7 or 3, 3, 3, 3, 8	 B3	May be seen in any order. Five numbers must be given, otherwise B0. Check the conditions carefully if the numbers are not listed in ascending order. B1 for a range = 5. B1 for a total = 20. B1 for a median = 3. Penalise −1 the use of 0, negative or non-integer values.
	(3)	
20. 2 × 2 × 18 or 2 × 3 x 12 or 2 × 4 × 9 or 2 × 6 × 6 or 3 × 3 × 8 or 3 × 4 × 6	B2	May be seen in any order. Accept any clear representation of correct dimensions. B1 for (volume of cubes = 64 + 8 =) 72
	(2)	
21.(a) $\frac{2\times100}{40}$ or $\frac{2\times99}{40}$ or $\frac{2.1\times100}{40}$ 5 or 4·95 or 5·25	M1 A1	May be seen in stages. Award M1 only for $\frac{2.13\times100}{40}$ Must follow their calculation. Award M0 A0 for an unsupported 5.

© WJEC CBAC Ltd.

21.(b)(i) 2652	B1	
21.(b)(ii) 0·78	B1	
	(4)	
22.*(a) Method to find prime factors with two correct prime factors seen from the set {3, 3, 5, 5, 11} before the second error. 3, 3, 5, 5, 11 $3^2 \times 5^2 \times 11$	 M1 A1 B1	 Note: 2475 = 3 x 825 or 5 x 495 or 11 x 225 or 15 x 165 or 25 x 99 C.A.O. Ignore 1s. Primes may only be seen in factor tree. FT 'their derived primes' provided at least one index form used with at least one square. Do not FT non-primes. Allow $(3^2)(5^2)(11)$ and $3^2.5^2.11$ Do not allow $3^2,5^2,11$. Inclusion of 1 as a factor gets B0.
22.(b) 2^3 x 5^2 x 7^2	 B2	 B1 for sight of • 8 x 5^2 x 7^2 • 8 x 25 x 49
	(5)	
23*.(a) An appropriately worded question e.g. How much do you spend each month on gym membership? AND An appropriate set of response boxes e.g. c =£0, £0 < c ≤ £10, £10 < c ≤ £20, c > £20 less than £10, £10-£20, more than £20	 B2	 Question must include 'each month', There must be a **minimum of 3 response** boxes which: • do not overlap • cover all amounts including £0 and no upper limit with the exception of allowing a consistent £1 gap e.g. £0 £1 to £10, £11 to £20, £21 or more *Note: If inequalities are used then allow e.g.* *< 5, 5 - 10, 11 - 15, > 15* *OR 5 >, 5 - 10, 11 - 15, 15 <* *OR 0 ≤ 10, 11 ≤ 20, 21 ≤ 30, ≥ 31* *where the inequalities are in the correct directions and the groups are clear.* *Treat as one error incorrect use e.g.* *0 ≥10, 11 ≥ 20, 21 ≥ 30, 31 ≥* B1 for one of the following: • an appropriately worded question with no more than 'one identified error' from above response boxes. • a question that does not include 'per month' but with no errors in the response boxes.

© WJEC CBAC Ltd.

23(b)(i) Appropriate explanation e.g. 'The mean is affected by the few people who spent a long time (in the leisure centre).' 'The mean can be significantly affected by outliers or skew' 'It would be more accurate to use the mode' 'Most people spent less than 7 hours (in the leisure centre).' 'The modal time (or median time) is 0 – 4 hours.'	E1	Do not accept: 'The mean is not the best average.'
23(b)(ii) Appropriate reason e.g. 'Not enough people asked.' 'Many responding 0-4 hours probably didn't go to the leisure centre'	E1	Do not accept: 'Some people spend longer than 24 hours' 'He only asked in one area' 'Only collected data for one week' 'They may spend different amounts of hours each week'
	(4)	
24*. 30x = 40x – 80 or better x = 8 (Capacity =) 240 (litres)	 B3 B1 B1	 B2 for 30x = 40(x – 2) OR $\frac{30x}{x-2} = 40$ B1 for sight of one of the following: • 30x • 40(x – 2) • 30 = k/x and 40 = k/(x+2) An answer of 240 (litres) implies the previous B1 If B2 awarded and x ≠ 8 award a further SC2 for a correctly evaluated answer to 30 × 'their positive 8'.
	(5)	
25*.(a) $\frac{11}{21}$	 B1	
25.(b) 5 parts = (£)45 OR 1 part = (£)9 OR 11 parts – 2x3 parts = 45 oe OR $^{11}/_{21} - 45 = {}^{6}/_{21}$ 45 ÷ 5 x 7 oe OR 9 x 7 (£)63	 B1 M1 A1	 May be implied by M1 FT an arithmetic error in 'their 11 – 2x3' for M1 A0
	(4)	

© WJEC CBAC Ltd.

26*. 36 $\times \frac{6}{9}$ oe $\times \frac{1}{2}$ 12 (minutes)	M1 M1 A1	<u>A table method altering all 3 values in the same ratio at the same time is M0</u> M marks may be seen in either order e.g. <u>Printers</u> <u>Booklets</u> <u>Time</u> 9 n 24 **FT from M0 previously awarded** Must be from use of 36 e.g. if this calculation is performed first <u>Printers</u> <u>Booklets</u> <u>Time</u> 6 0.5n 18 CAO
<u>Alternative method 1</u> *Printers first then booklets* ***Printers*** / ***Booklets*** / ***Time*** *6* / *n* / *36* × 1.5 / × 1.5 / *M1* *9* / *1.5n* / *36* / ÷ 3 / ÷ 3 *M1* *9* / *½ n* / *12* *A1*		*Note: the number of booklets may be an assumed number* FT 9 and 'their 36' CAO
<u>Alternative method 2</u> *Booklets first then printers* ***Printers*** / ***Booklets*** / ***Time*** *6* / *n* / *36* *÷ 2* / *÷ 2* / *M1* *3* / *½ n* / *36* *× 3* / / *÷ 3* *M1* *9* / *½ n* / *12* *A1*		*Note: the number of booklets may be an assumed number* FT *½ n* and 'their 3' CAO
<u>Alternative method 3</u> *(using 1 printer)* ***Printers*** / ***Booklets*** / ***Time*** *6* / *n* / *36* *÷ 6* / / *× 6* *1* / *n* / *216* *× 9* / / *÷ 9* *M1* *9* / *n* / *24* / *÷ 2* / *÷ 2* *M1* *9* / *½ n* / *12* *A1*		*Note: the number of booklets may be an assumed number* *Two steps needed for M1* FT 9 and 'their 24' CAO
<u>Alternative method 4</u> *(using 1 printer)* ***Printers*** / ***Booklets*** / ***Time*** *6* / *n* / *36* *÷ 6* / / *× 6* *1* / *n* / *216* / *÷ 2* / *÷ 2* *M1* *1* / *½ n* / *108* *× 9* / / *÷ 9* *M1* *9* / *½ n* / *12* *A1*		*Note: the number of booklets may be an assumed number* *Two steps needed for M1* FT *½ n* and 'their 108' CAO
	(3)	

© WJEC CBAC Ltd.

27*.(a) (£)72	 B2	 B1 for 54 ÷ 3 x 4 OR 54 ÷ 0·75 oe
27.(b) (i) 0.67	 B1	
27.(b) (ii) 1.06^3	 B1	
	(4)	
28*. 3a + 4b = 2(.)70. AND 2a + 3b = 1(.)95 Method to eliminate one variable e.g. equal coefficients with intention to subtract OR rearranges one equation and substitutes into the other First variable correct Method to calculate second variable Second variable found (£)2.10 or 210(p)	 B1 M1 A1 m1 A1 A1	 Both equations given, a & b may be other letters, words are accepted. FT provided at least one equation is correct and consistent place value, with equivalent level of difficulty. Allow 1 error in one term, not one with equal coefficients C.A.O. Accept in £ or p **apple = 30p** or **banana = 45p** FT their '1st variable' provided M1 previously awarded. FT Accept in £ or p (provided > 0) FT 'their a and b' provided B1 M1 m1 previously awarded and both greater than 0. If units are given they must be correct. No marks for trial and improvement. No marks for an unsupported answer.
<u>Alternative method</u> (for candidates who do not find the values of both variables) *3a + 4b = 2(.)70. AND* *2a + 3b = 1(.)95* *(£)2.10 or 210(p)*	 *B1* *SC5*	 *Both equations given, a & b may be other letters, words are accepted.* *Award SC5 for a **complete algebraic method**, with <u>no errors</u>, leading to a final answer of (£)2.10 or 210(p). Method may include adding/subtracting/scaling/substituting into equations.*
	(6)	

© WJEC CBAC Ltd.

29*.(a) 4.3×10^{11}	B2	B1 for sight of the correct value not in standard form e.g. 0.43×10^{12} or 430 000 000 000
29.(b) 7.9×10^{5}	B2	Be aware of correct answer from incorrect work. Award B0. B1 for the correct value not in standard form e.g. 79×10^{4} or 790 000 If no marks, award SC1 for 760000 + 30000 seen with a slip in the addition but their answer correctly converted into standard form
	(4)	

© WJEC CBAC Ltd.