REVISE
.wales

F3.08 — Collecting & organising data — tally, frequency & class intervals

Mark schemes for the F3.08 question pack

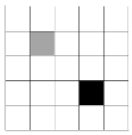
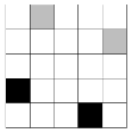
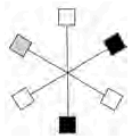
Spec 4.1.1, 4.1.2, 4.1.3, 4.1.4, 4.1.5, 4.1.6, 4.1.7, 4.1.8 — Unit 3

SOLUTIONS · 2025 SPECIFICATION

Mark schemes for the 7 questions in the corresponding revise.wales question pack (21 marks total). Sources: legacy WJEC GCSE papers, WJEC SAM, and custom-authored mark schemes. Pack layout © revise.wales.

WJEC GCSE MATHEMATICS

SUMMER 2019 MARK SCHEME

GCSE Mathematics Unit 1: Intermediate Tier	Mark	Comments
1. 23 – (4 + 2) × 3 = 5 TRUE 7/10 + 2/5 = 9/15 FALSE ½ of 1/8 = 1/4 FALSE 25% of 0·4 = 0·1 TRUE 28 – 3 × 2 + 5 = 55 FALSE	B3	For all 5 correct B2 for 4 correct. B1 for 3 correct
2.(a) Type: Yellow <100 (8), Yellow ≥100 7, Blue <100 4, Blue ≥100 6 Num.	B2	For all three correct. B1 for 1 or 2 correct. If no marks awarded allow B1 for all correct tallies seen.
2.(b) Any valid statement that indicates that the numbers (in the table) are added (to make 25). e.g. 'add the frequency'	E1	Allow 'add them up'. Allow sight of '8 + 7 + 4 + 6 (= 25).'
2.(c) $\frac{8}{25}$ or equivalent ISW	B2	B1 for x/25 with x<25. B1 for 8/y with y >8. Penalise incorrect notation −1. e.g. '8 out of 25', '8 : 25', '8 in 25'.
3.(a) 	B1	
3.(b) 	B1	
3.(c) 	B1	
4.(a) −3 1	B1 B1	OR FT 'their −3' + 4.
4.(b)(i) 21	B1	
4.(b)(ii) 191	B1	
4.(c) Divide (the previous number) by 3.	E1	Allow '÷3'. Do not accept n÷3.

<table>
<tr><td>8(a) $5p$</td><td>B1</td><td></td></tr>
<tr><td>8(b) (i) (x =) 8</td><td>B1</td><td>Accept embedded answer</td></tr>
<tr><td>8(b) (ii) (y =) 15</td><td>B1</td><td>Accept embedded answer</td></tr>
<tr><td>8(c) 19</td><td>B1</td><td>Accept 4 x 19 (= 76) or 19 x 4 (= 76)</td></tr>
<tr><td>9.
<table><tr><td>23 – (4 + 2) × 3 = 5</td><td>TRUE</td><td></td></tr><tr><td>7/10 + 2/5 = 9/15</td><td></td><td>FALSE</td></tr><tr><td>½ of 1/8 = 1/4</td><td></td><td>FALSE</td></tr><tr><td>25% of 0·4 = 0·1</td><td>TRUE</td><td></td></tr><tr><td>28 – 3 × 2 + 5 = 55</td><td></td><td>FALSE</td></tr></table></td><td>B3</td><td>For all 5 correct
B2 for 4 correct.
B1 for 3 correct</td></tr>
<tr><td>10.(a)
<table><tr><td rowspan="2">Type</td><td colspan="2">Yellow</td><td colspan="2">Blue</td></tr><tr><td><100</td><td>≥100</td><td><100</td><td>≥100</td></tr><tr><td>Num.</td><td>(8)</td><td>7</td><td>4</td><td>6</td></tr></table></td><td>B2</td><td>For all three correct.
B1 for 1 or 2 correct.
If no marks awarded allow B1 for all correct tallies seen.</td></tr>
<tr><td>10.(b) Any valid statement that indicates that the numbers (in the table) are added (to make 25) e.g. ‘add the frequency’.</td><td>E1</td><td>Allow ‘add them up’.
Allow sight of ‘8 + 7 + 4 + 6 (= 25).’</td></tr>
<tr><td>10.(c) $\frac{8}{25}$ or equivalent ISW</td><td>B2</td><td>B1 for x/25 with x<25.
B1 for 8/y with y >8.
Penalise incorrect notation -1; e.g. ‘8 out of 25’, 8:25, ‘8 in 25’.</td></tr>
<tr><td>11.(a) −3
1</td><td>B1
B1</td><td>OR FT ‘their −3’ + 4.</td></tr>
<tr><td>11.(b)(i) 21</td><td>B1</td><td></td></tr>
<tr><td>11.(b)(ii) 191</td><td>B1</td><td></td></tr>
<tr><td>11.(c) Divide (the previous number) by 3.</td><td>E1</td><td>Allow ‘÷3’.
Do not accept n÷3.</td></tr>
</table>

11.(a)

Throws	20	40	60	80	100
Heads	11	18	24	30	**37**
Rel. Fq.	0·55	0·45	**0·4**	0·375	0·37

B1

B1

11.(b) (Mid-points are) 4·5, 14·5 and 24·5. B1

(Estimated total =) F.T. 'their mid-points' if within group.

$3 \times 4{\cdot}5 + 5 \times 14{\cdot}5 + 2 \times 24{\cdot}5$ (= 135) M1

$\div 10$ m1

(Estimated mean =) $= 13{\cdot}5$ A1 C.A.O.

(Difference = 15·2 – 13·5 =) 1·7 B1 F.T. for difference between 15·2 and 'their derived estimated mean (≠15·2)'. Allow –1·7

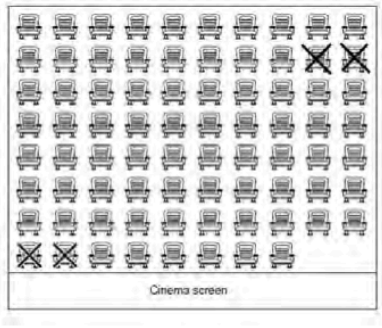
WJEC GCSE MATHEMATICS

AUTUMN 2021 MARK SCHEME

Unit 2: Intermediate Tier		Mark	Comments
1.(a)	$7x = 14$ $x = 2$	B1 B1	 FT from $7x = k$. Accept $x = k/7$ (but, if on FT k is a multiple of 7, final answer must be given as a whole number.) B1B0 for '$x = 14/7$' An evaluated FT for $k \div 7$ must be rounded or truncated to at least 2dp. e.g. $7x = 8$ (B0) followed by, $x = 8 \div 7$ (B0) $x = 8/7$ (B1), $x = 1\frac{1}{7}$ (B1), $x = 1{\cdot}14$ (B1), $x = 1{\cdot}1$ (B0) Mark final answer. Allow 2 marks for embedded answer BUT only 1 mark if contradicted by $x \neq 2$.
1.(b)	10	B2	C.A.O. B1 for sight of $17{\cdot}4$ OR $-7{\cdot}4$ Do not accept $17{\cdot}4f$ nor $-7{\cdot}4g$ Do not treat the use of $3{\cdot}7$ for $-3{\cdot}7$ as a misread.
2.(a)	$\frac{24}{54}$	B1	
2.(b)	23	B1	
2.(c)	1853	B1	
3.	(Total number of paper clips =) $200 \times 440 \times n$ where $320 \leq n \leq 330$.	M2	M1 for $200 \times n$ OR $440 \times n$ where $320 \leq n \leq 330$. Allow use of 400 or 450 for 440. *Note* *If n taken to be 225 or 425 treat as a misread and allow M2 but penalise −1 from any further A1, B1 marks gained.*
	Correct evaluation.	A1	CAO from their numbers if M2 gained. (n=320 gives 28 160 000, n=325 gives 28 600 000, n=330 gives 29 040 000.)
	(To the nearest ten million) 30 000 000 (paper clips)	B1	FT 'their evaluation' if greater than 5 million. A final answer of 30 million implies M2A1B1. Allow M2A0B0 for an unsupported final answer of 28 000 000 or 29 000 000.
OCW	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 • 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 writing.	W1	For 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
4.(a)	3	B1	If no answer seen, check table.
4.(b)	15	B1	If no answer seen, check table.

10. (-2, 1)	B2	B1 for: • one correct coordinate, or • a clear indication of the correct position of the midpoint, or • the correct coordinates reversed.
11.(a) 7x =14 x = 2	B1 B1	FT from 7x = k. Accept x = k/7 (but, if on FT k is a multiple of 7, final answer must be given as a whole number.) B1B0 for 'x = 14/7' An evaluated FT for k ÷ 7 must be rounded or truncated to at least 2dp. e.g. 7x = 8 (B0) followed by, x = 8 ÷ 7 (B0) x = 8/7 (B1), x = $1^{1}/_{7}$ (B1), x = 1·14 (B1), x = 1·1 (B0) Mark final answer. Allow 2 marks for embedded answer BUT only 1 mark if contradicted by x ≠ 2.
W Accuracy of writing.	W1	For 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.(b) 10	B2	C.A.O. B1 for sight of 17·4 OR −7·4 Do not accept 17·4f nor −7·4g Do not treat the use of 3·7 for −3·7 as a misread.
12. (Total number of paper clips =) 200 × 440 × n where 320 ≤ n ≤ 330. Correct evaluation. (To the nearest ten million) 30 000 000 (paper clips)	M2 A1 B1	M1 for 200 × n OR 440 × n where 320 ≤ n ≤ 330. Allow use of 400 or 450 for 440. *Note* *If n taken to be 225 or 425 treat as a misread and allow M2 but penalise −1 from any further A1, B1 marks gained.* CAO from their numbers if M2 gained. (n=320 gives 28 160 000, n=325 gives 28 600 000, n=330 gives 29 040 000.) FT 'their evaluation' if greater than 5 million. A final answer of 30 million implies M2A1B1. Allow M2A0B0 for an unsupported final answer of 28 000 000 or 29 000 000.
13.(a) 3	B1	If no answer seen, check table.
13.(b) 15	B1	If no answer seen, check table.
14.(a) (0)7:45 23 (March)	B2	B1 for each. B0 for (0)7:45 p.m.
14.(b) Sight of 5 miles ≡ 8 km or equivalent. Shows 15 miles to be 24 km AND a valid statement e.g. 'yes (it's nearly 25 km'), 'no (it's only 24 km').	B1 B1	Allow a more accurate conversion (5 miles ≡ 8 to 8·05 km). Do not accept 3 miles ≡ 5 km '15 miles is 24 km' with no statement is B1B0. Accept a one word decision of 'Yes' or 'No' as a statement.
Alternative method *Sight of 8 km ≡ 5 miles or equivalent.* *Shows 25 km to be 15·625 miles AND a valid statement e.g. 'yes (it's just over 15 miles'), 'no (it's over 15 miles)'.*	*B1* *B1*	*Allow a more accurate conversion (8 km ≡ 4·97 to 5 miles).* *Do not accept 5 km ≡ 3 miles* *'25 km is 15·625 miles' with no statement is B1B0.* *Accept a one word decision of 'Yes' or 'No' as a statement.*

2(a) (Amount of discount for 1 ticket =) (£)0.45 or 45(p) OR (Amount of discount for 2 tickets =) (£)0.9(0) or 90(p)	B1	If units are given, they must be correct Workings may be seen in stages Award B1 for (£)0.9(0) or 90(p) seen as the **total discount**
(Cost of tickets =) 2 × (£)4.50 – 2 × (£)0.45 + (£)1.40 (9 – 0.90 + 1.40) Or 2 × (£)4.50 – 2 × 0.1 × (£)4.50 + (£)1.40 Or equivalent	M2	FT 'their **derived or stated** (£)0.45 or (£)0.9(0)' Award M1 for: • 2 × (£)4.50 – 2 × (£)0.45 (£9 – 90p) • 2 × (£)4.50 – 1 × (£)0.45 + (£)1.40 (£9 – 45p + £1.40) • 1 × (£)4.50 – 2 × (£)0.45 + (£)1.40 (£4.50 – 90p + £1.40) • 1 × (£)4.50 – 1 × (£)0.45 + (£)1.40 (£4.50 – 45p + £1.40) • 2 × (£)4.50 – 2 × (£)0.45 + 2 × (£)1.40 (£9 – 90p + £2.80) • 2 × (£)4.50 + (£)1.40 (£)9 + (£)1.40
= (£)9.50	A1	FT from M2 or M1 (Answers from M1: (£)8.10, (£)9.95, (£)5, (£)5.45 (£)10.90, (£)10.40) <u>If the discount is applied at the end:</u> Award M1 for 2 x £4.50 + £1.40 Award A1 for £10.40 Award SC1 for an answer of £9.36 (from £10.40 – 0.1 x £10.40 = £10.40 – £1.04) FT for SC1 for 0.9 × 'their 10.40' correctly evaluated provided M1 awarded <u>If the booking fee is added to the cost of each ticket and the discount is applied at the end:</u> Award M1 for: 2 x (£4.50 + £1.40) – 0.1 x (£4.50 + £1.40) Or £11.80 - £1.18 Award A1 for £10.62 If no marks awarded, award SC1 for (£)9 seen
Organisation and communication Writing	OC1 W1	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 • lay out their explanations and working in a way that is clear and logical • write a conclusion that draws together their results and explains what their answer means For 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.

2(b) Seats G9 **and** G10 indicated on diagram 	B1	
2(c) (£)3.59 + (£)5.45 (£)9.04 (£)9.04 – (£)7.60 (£)1.44	M1 A1 M1 A1	No misread allowed CAO FT 'their derived or stated 9.04' provided 'their 9.04' > 7.60

End of solutions