REVISE
.wales

F3.13 — Misleading graphs & drawing valid conclusions

Mark schemes for the F3.13 question pack

Spec 4.2.21, 4.2.22, 4.2.23 — Unit 3

SOLUTIONS · 2025 SPECIFICATION

Mark schemes for the 11 questions in the corresponding revise.wales question pack (14 marks total). Sources: legacy WJEC GCSE papers, WJEC SAM, and custom-authored mark schemes. Pack layout © revise.wales.

		allow SC1 for sight of 15 e.g. '15/50', 15 : 35.
5.(a) Correct cuboid	B2	For B2, their cuboid must have edges along or parallel to the 3 directions usually associated with isometric paper (the two diagonals and the vertical). B1 for any one edge dealt with correctly for all its three occurrences in a cuboid. For any mark to be awarded the line must go 'through the dots' AND have both ends 'on a dot'. Ignore attempt at handling 'hidden lines'.
5.(b) (Volume =) 6 × 4 × 3 = 72 cm^3.	M1 A1 U1	Any further manipulation to 6 × 4 × 3 is M0. Independent of other marks.

13.(a) Statement indicating that 0·3 is less than 0·5. OR Statement indicating that probability of selecting a blue ball should be greater than 0·5. OR Statement that refers to a proportion of the balls e.g. '(Only) 30% (of the balls) are blue', '(Only) 3/10(ths) (of the balls) are blue'.	E1	B0 for e.g. 'Fewer than half the balls are blue'. 'Should be higher', 'Would be above 0·3'. Allow correct interpretation of 0·3 e.g. '(Only) 30 out of 100 are blue', '(Only) 15 out of 50 are blue'. Accept any indication for 0·5, e.g. 'half', '½'.
13.(b) 0·7 or equivalent.	B1	B0 for incorrect notation; e.g. 7 out of 10.
13.(c) $\frac{0·3 \times 50}{15}$	M1 A1	If no marks gained, allow SC1 for sight of 15; e.g. 15/50, 15:35.

3.(a) Sum of numbers (225) Sum of numbers / 9 25	M1 m1 A1	Allow for an unsupported value between 192 and 258 inclusive. Award this m1 for 'their sum' ÷ 9 CAO
3.(b) Correct explanation e.g. Neil hasn't written the numbers in (ascending or descending) order.	E1	

WJEC GCSE MATHEMATICS (NEW)

SUMMER 2019 MARK SCHEME

GCSE MATHEMATICS Unit 2: Foundation Tier	Mark	Comments
1. (£)4.67 (£)5.84 (£)7.08 (£)1.45	B1 B1 B1 B1	
2.(a) Pentagon	B1	
2.(b) Rhombus	B1	Allow equilateral kite, but not kite or parallelogram.
2.(c) Cylinder	B1	Allow circular prism.
3.(a) (47,) 94, 141	B1	Ignore additional multiples.
3.(b) 52	B1	
3.(c) 209	B1	
4.(a) Midpoint unambiguously indicated	B1	Allow +/- 2 mm.
4.(b) Unambiguous parallel line drawn through C	B1	Allow +/- 2°.
5.(a) 9 (and) 16	B2	Allow 3^2 (and) 4^2. B1 for a sum of two square numbers less than 30 seen in workings or two square numbers less than 30 written on the answer line.
5.(b) Accept suitable explanations, e.g. • the sum of three even numbers will be even (and 23 is odd) • when you add any amount of even numbers the answer is always even (whilst 23 is odd). • (23 is odd, but) even + even + even = even	E1	Allow • even + even = even, • because 23 is odd.
6. FALSE TRUE FALSE TRUE	B2	For all four correct. B1 for 3 correct.
7.(a) 60 (%)	B2	B1 for equivalent fraction or decimal (0.6, 3/5, 12/20). If B2 not awarded, F.T. their fraction (except for ½, ¼ and ¾) correctly converted to a percentage for B1.
7.(b) Multiply by 4	E1	Accept other correct explanations e.g. divide (the number) by 5 then multiply by 20, double (the number) and double (it) again or divide by ¼.
7.(c) Accept suitable explanations, e.g. • 0.125 (is greater than) 0.1 • 5/40 (is greater than) 4/40	E1	Award E1 for other correct explanations e.g. a larger denominator means each part of the whole is smaller, or for correct evaluation of 1/8 and 1/10 of a chosen number.
8.(a) 65 (°)	B1	Allow ±2°
8.(b) 225°	B1	
8.(c) (Small angle = 180 ÷ 6 =) 30(°) (Large angle = 5 × Small angle =) 150 (°)	 B1 B1	Check diagram, though answer space takes precedence. F.T. 'their small angle' × 5 or 180 - 'their small angle ', provided answer is less than 180°. If no marks awarded, award B1 for both correct angles given in reverse.

Unit 2: Foundation Tier		Mark	Comments
1.(a) 452 × 63 = 28 466		B1	
1.(b)	3838	B1	
1.(c) 22		B1	

4. Reference to the coordinates being reversed e.g. • The coordinates have been reversed Reference to the poor syntax e.g. • He has used a semi colon instead of a comma • He hasn't written his coordinates in brackets	E1 E1	Allow E1 for 5, 1 OR (5; 1). Allow E1 for (1, 5). Allow E1 E1 for "it should be (5, 1)". If no marks, award E1 E0 for reference to Steve plotting the point in the wrong place e.g. "he should have gone (1) across and then (5) up". Plotting (1,5) with '(1,5)' written alongside is E1 E0. Plotting (1,5) with no attempt at an explanation is E0

10.(a) (k =) 9	B1	Accept embedded answer
10.(b) (p =) 12	B1	Accept embedded answer

10.	$0{\cdot}55 \times 42{\cdot}8$ or equivalent.	M1	Award M1 for complete method.
	$= 23{\cdot}54$	A1	CAO. If 23·54 is seen, but then **a rounded or truncated** (e.g. 23·5) value is given award M1A1. Do **not** ignore any other subsequent work (e.g. 23·54 seen but then 66·34 given as a final answer is awarded M1A0). An unsupported answer of 23·54 is awarded M1A1. If no marks, award SC1 for an answer of: • 23·5 (unsupported) • 23·54% (unsupported) • 66·34 (× 1·55) (supported or unsupported) • 19·26 (× 0·45) (supported or unsupported).

16.(a) A correct explanation given. e.g. '(equal) groups do not reach 20', '12 to 15 and 16 to 19 so no 20', ' to reach 20 the groups are not equal' 'it only goes up to 19' '20 not included'.	E1	Allow any unambiguous explanation. Do not accept: 'because there's only 20 attempts'. Award E1 if incorrect values are given in the table but correct explanation given.
16.(b) (0 to 6) 7 to **13** **14** to 20	B1	Answer in table takes precedence.
16.(c)(i) $\frac{17}{100}$ or equivalent ISW	B1	B0 for incorrect notation e.g. '17 in 100', '17 out of 100', '17:100' etc.
16.(c)(ii) A correct explanation given e.g. 'the eleven competitors might have all scored 20', 'only one of them (might have) scored 19', 'we don't know how many competitors scored 19' 'the probability of scoring 18, 19 or 20 is $\frac{11}{100}$ ' 'the 11 could include (the scores of) 18 and 20' 'it doesn't tell you the exact score of all 11 competitors'	E1	Allow any unambiguous explanation. E0 for mixing number of competitors and number of points scored. e.g. '11 points were scored for 18, 19, 20' '18, 19 or 20 people could have scored 11'.
17.(a) $\frac{96}{300}$ (× 100) or equivalent = 32(%)	M1 A1	M1 for sight of 0·32. Note: other complete valid methods to look out for include: • 96 ÷ 3 • 10% + 10% + 10% + 1% + 1% (= 30 + 30 + 30 + 3 + 3) • (96 out of 300 =) 32 out of 100 = 32(%).

8. 332	B2	B1 for one of the following: • a final answer of 332AB • sight of 180 (but not 180A) • sight of 152 (but not 152B)

11.(a) (x =) 180 – 62 × 2 or equivalent 56(°)	M1 A1	Check diagram for answers. Answer line takes precedence. Note: 180 – 124. Award M1 for complete method or intention of complete method provided not contradicted e.g. brackets missing 180 – 62 + 62 = 58 M1 A0, 180 – 62 + 62 = 180 M0 A0. CAO.
11.(b) ($Q\hat{R}S$ =) 102(°) (y =) 360 – (115 + 60 + 102) or equivalent. = 83(°)	B1 M1 A1	Check diagram for answers. Answer line takes precedence. Note: 360 – 277. Award M1 for complete method or intention of complete method provided not contradicted e.g. brackets missing 360 – 115 + 60 + 102. FT for M1 and a possible A1 185 – 'their 102' provided $y > 0$ and 'their 102' is: • not 78 (unless $Q\hat{R}S$ = 78 is stated or on diagram) • not 254.