REVISE
.wales

F3.10 — Scatter diagrams, correlation & line of best fit

Mark schemes for the F3.10 question pack

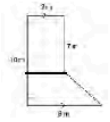
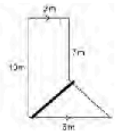
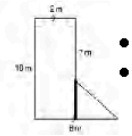
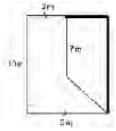
Spec 4.2.4, 4.2.5, 4.2.6, 4.2.7 — Unit 3

SOLUTIONS · 2025 SPECIFICATION

Mark schemes for the 3 questions in the corresponding revise.wales question pack (10 marks total). Sources: legacy WJEC GCSE papers, WJEC SAM, and custom-authored mark schemes. Pack layout © revise.wales.

8(a)(i) (2.5, 42) stated with a suitable line of best fit drawn through this point	B2	For B2 do not ignore the answer space stating an incorrect point, or giving reverse coordinates
		
		Conditions of a suitable line of best fit:
		• The straight line (accept intention if a ruler is not used) must have points above and below it
		• The line must be of sufficient length, to illustrate trend for at least 6 points
		• The trend shows that there are points above and below the line towards each end of the line
		
		For B2 the point (2.5, 42) **must** be stated or plotted with a suitable line of best fit through this point.
		If (2.5, 42) is not stated or plotted, then it is only possible to award a maximum of B1
		
		Allow B2 for one of the following:
		• a blank answer space with (2.5, 42) plotted with a suitable line of best fit through (2.5, 42)
		• (2.5, 42) stated in the answer space, but not plotted, with suitable line of best fit passing through (2.5, 42)
		
		B1 for sight of any one of the following:
		• (2.5, 42) stated in the answer space
		• blank answer space with (2.5, 42) indicated by a correct plot
		• A suitable line of best fit for the given points:
		  ○ with no additional point plotted
		  ○ passing through 'their additional incorrect point' (plotted)
		  ○ suitable if 'their additional incorrect point' plotted is ignored

8(a)(ii) Reading from line of best fit for number of cups (tolerance to the nearest gridline) for rainfall of 2.0 mm	B1	Answer space takes precedence **STRICT FT** from (a)(i) 'their line of best fit' which must be drawn for negative correlation No mark is awarded if no line of best fit drawn in (a)(i)
8(b) $5 \times 18 + 5 \times 0.5$ or 18.5×5 92.5 (cm)	M1 A1	Allow for $18 <$ 'their 18.5' ≤ 19 CAO If no marks, award SC1 for sight of 18.5 (cm) or 18.4999(... cm) provided clearly a recurring 9 digit
8(c) Selects or unambiguously implies 'No' with a reason, e.g. '(Space) minimum 97.25 (cm) (which is less than 97.3 cm)'	E1	Allow 'No' with a reason, e.g. '97.25 (cm)' '(least) 97.25 and (greatest) 97.75' Do not accept 'No' with the reason, e.g. '97.75 (cm)'

Unit 1: Intermediate Tier	Mark	Comments
6(a)(i) (£) 70	B2	B1 for any one of the following: • use of (£)2010 • use of (£)1940
6(a)(ii) Answer in the inclusive range (£)1700 to (£)1780	B1	Allow answers given as a range provided 'their range' is inclusively within the required range
6(b) (Total area of the driveway)	M2	
 • ½ × (10 – 7) × (2 + 6) + 2 × 7 • ½ × 3 × 8 + 2 × 7 (= 12 + 14)		M1 for one of the following appropriate areas: • ½ × (10 – 7) × (2 + 6) (= 12m² area of trapezium)
 • ½ × 2 × (7 + 10) + ½ × 6 × (10 – 7) • ½ × 2 × 17 + ½ × 6 × 3 (= 17 + 9)		• ½ × 2 × (7 + 10) (= 17m² area of trapezium) • ½ × 6 × (10 – 7) (= 9m² area of a triangle)
 • ½ × (10 – 7) × (6 – 2) + 2 × 7 + 2 × 3 • ½ × 3 × 4 + 2 × 10 (= 6 + 20)		• ½ × (10 – 7) × (6 - 2) (= 6m² area of the triangle)
 • 6 × 10 – ½ × (6 – 2) × (7 + 10) • 6 × 10 – ½ × 4 × 17 (= 60 – 34)		• ½ × (6 – 2) × (7 + 10) (= 34m² area 'extra' trapezium)
26 (m²)	A1	CAO
Cost in the inclusive range (£)1780 to (£)1860	B1	FT '20 ≤ their derived composite **area** ≤ 30' for a suitable cost from the scatter diagram, within a range (shown below); must be for a composite area Do not FT from the perimeter or with the missing side, 25(m) Allow an answer in a range, provided 'their range of answers' is inclusively within the stated range On FT cost in the inclusive range:

Area (m²)	Least estimated cost (£)	Greatest estimated cost (£)
20	1410	1460
21	1460	1510
22	1520	1570
23	1590	1650
24	1650	1710
25	1700	1780
26	**1780**	**1860**
27	1850	1930
28	1920	2010
29	1970	2060
30	2030	2130

Unit 1: Intermediate Tier	Mark	Comments
6(c) (Repair of 23m^2 driveway cost £) 0.4 × 1590 to 0.4 × 1650 'No' unambiguously stated or implied **AND** a correctly evaluated 40% cost that will be in the range (£)636 to (£)660	B1 B1	 Do not award if 'No' is based on further working, such as 60% evaluated rather than 40%
6(c) Alternative method e.g. • *40% is (£)575 so 100% is 2.5 × 575 (= £1437.50)* • *40% is (£)600 so 100% is 2.5 × 600 (= £ 1500)* *'No' unambiguously stated or implied* ***AND** a correctly evaluated 100%* ***AND** shows less than needed, e.g. a reading from the diagram £1590 to £1650 (22.8m^2 for £1600)*	*B1* *B1*	

8(a) (£) 70	B2	B1 for any one of the following: • use of (£)2010 • use of (£)1940
8(b) Answer in the inclusive range (£)1700 to (£)1780	B1	Allow answers given as a range provided 'their range' is inclusively within the required range