REVISE
.wales

F2.14 — 2-D & 3-D shape vocabulary & properties

Mark schemes for the F2.14 question pack

Spec 3.1.1, 3.1.2, 3.1.3 — Unit 2

SOLUTIONS · 2025 SPECIFICATION

Mark schemes for the 16 questions in the corresponding revise.wales question pack (24 marks total). Sources: legacy WJEC GCSE papers, WJEC SAM, and custom-authored mark schemes. Pack layout © revise.wales.

10. (BC =) (24 – 2x7)/2 (BC =) 5(cm) (Area CDEF =) $\frac{(7+3)}{2} \times (9-5)$ or equivalent. = 20 (cm^2)	✓ ✓ ✓ ✓	M1 A1 M1 A1	*Lengths may be seen on diagram.* A clearly shown incorrect method for finding CD is M0A0 otherwise CD=4(cm) implies this M1A1. F.T. 'their derived 5' OR F.T. $\frac{(7+3)}{2}$ × 'their stated or shown length CD (<9)' Allow M1 for correct intent e.g. '7 + 3 × 4 ÷ 2' then A0. Ignore any further attempt to find total area of whole shape if area of CDEF seen.
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
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.

Unit 2: Foundation Tier Summer 2018			
1.	4.15	B1	Condone spurious units.
	4.67	B1	
	3.22	B1	

5. 13 (cm)	B1	Accept 12.8 – 13.2 (cm)
6.(Time journey began=)7(p.m.) – 2(hr)35(min) (=) 4:25 (p.m.) (Time in 24 hour clock =) 16(:)25	M1 A1 B1	Accept unsupported 4:65 or 16(:)65 as evidence of M1 only Accept 4 hours 25 mins. FT 'their 4:25' written in 24-hour clock provided between 1 p.m. and midnight inclusive. Condone 16(:)25 p.m. for B1. (Penalised with W0)
Organisation and Communication Accuracy of 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 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. 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.

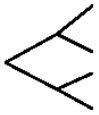
5.(a) Lines Curve	L1 C1	For all 3 straight lines. F.T. their lines, must have opposite curvature, starting at the correct place and ending at the start of their line.
5.(b) Rectangle	B1	
5.(c) Cylinder	B1	

WJEC GCSE MATHEMATICS

AUTUMN 2019 MARK SCHEME

GCSE MATHEMATICS Unit 2: Foundation Tier		Mark	Comments
1.	72 150 52 59 168 158	B1 B1 B1 B1	
2.(a)	(44), 88, 132, 176, 220	B1	Ignore any additional multiples
2.(b)	33	B1	
3.	> < > <	B2	For all four correct. B1 for any three correct.
4.	(Perimeter of triangle = 14 + 14 + 14) = 42 (cm) (Length of side of square =) 42 ÷ 4 = 10.5 (cm)	 B1 M1 A1	 May be implied. F.T. 'their 42' provided ≠ 14
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
5.	0.1(0) 10% $\frac{2}{25}$ 0.08	B4	B1 for each correct response.
6.(a)	32.16	B1	Accept $32\frac{4}{25}$ and $\frac{804}{25}$. B0 for 804 ÷ 25.
6.(b)	0.4	B1	Accept $\frac{2}{5}$. B0 for 2 ÷ 5 or $\frac{1.6}{4}$
7.(a)	trapezium	B1	
7.(b)	cuboid	B1	
7.(c)	a reflex angle	B1	
7.(d)	parallelogram	B1	
8.(a)	Point R plotted correctly	B1	
8.(b)	(-3, 2)	B1	
9.	275	B2	B1 for sight of 301.

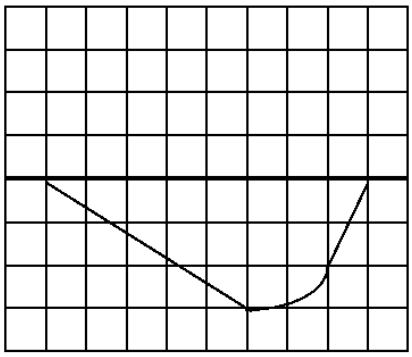
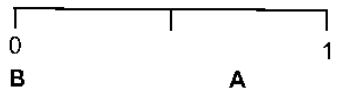
8. (Probability of Puffin Island=) 1 − 0·4 − 0·15 − 0·25 = 0·2	M1 A1	An unsupported answer of 0·56 implies M1
(Number of cards showing Puffin Island =) 0·2 × 80	M1	FT 'their stated P(Puffin Island)' × 80, only if 'their stated P(Puffin Island)' < 1.
= 16	A1	16/80 is M1A0 unless 16 has been seen.
Alternative method *(Number of cards showing other 3 islands =)* *0·4 × 80 + 0·15 × 80 + 0·25 × 80 or equivalent* *= 64*	*M1* *A1*	*Allow M1 for sight of 32 AND 12 AND 20.*
(Number of cards showing Puffin Island =) 80 – 64	*M1*	*FT 80 − 'their derived 64', only if 'their derived 64' < 80.*
= 16	*A1*	*16/80 is M1A0 unless 16 has been seen.*
8. 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
9.(a) Correct construction method. e.g. (i) intersecting arcs of radii 6cm and 9cm with centres A and C respectively. OR (ii) copying the angle at B at the point A (will require AB or BA to be extended).	M1	Relevant construction arcs must be seen.
Completed parallelogram.	A1	
9.(b) 'measured length' × 200	M1	Allow for error in measuring line XY.
= 1520 (cm)	A1	Accept only in range 1480 to 1560 inclusive.
= 15·2 metres	B1	FT 'their 1520' ÷ 100. Unsupported 14·8 to 15·6 inclusive gains all 3 marks.
Alternative method *Sight of scale is 1cm represents 2m*	*B1*	
'measured length' × 2	*M1*	*Allow for error in measuring line XY.*
= 15·2 metres	*A1*	*Accept only in range 14.8 to 15.6 inclusive.*
10.(a) 9·231	B1	
10.(b) 170	B1	
10.(c) 10	B1	
11(a) 5n − 3	B2	B1 for sight of 5n. Mark final answer.
11.(b) 17	B1	
11.(c) 2n + 2 OR 2(n + 1)	B2	If 2n + 2 is not their final answer allow B1 for sight of 2n + 2 in earlier work. B1 for a correct answer not simplified or incorrectly simplified e.g. n + n + 2.

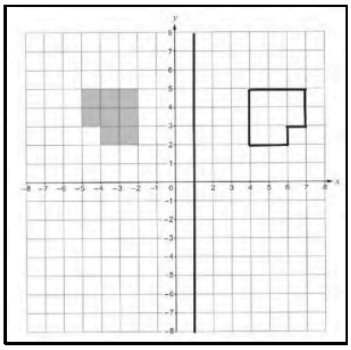
16.(a) $(x - 4)(x - 3)$ $(x =) 4$ AND $(x =) 3$	B2 B1	B1 for $(x \ldots 4)(x \ldots 3)$. Ignore '= 0'. Strict FT from their brackets. Allow the following. B2 for $x - 4 (=0)$ AND $x - 3 (=0)$ (B1) $(x =) 4$ AND $(x =) 3$ (B1) B1 for $x + 4 (=0)$ AND $x + 3 (=0)$ (B0) $(x =) -4$ AND $(x =) -3$ (B1) FT B1 if only $(x =) 4$ AND $(x =) 3$ seen. (B1)
16(b) $25x^2 - 20x + 4$	B2	Otherwise B1 for sight of $25x^2 \pm kx + 4$ (allow k = 0) B1 for sight of $25x^2 - 20x - 4$ Mark final answer.
17.(a) Correct framework 	B1	
Suitable labelling on both 1st pair of branches AND on both of at least one pair of 2nd set of branches. e.g. 'Car', 'No car', 'Before 8', 'After 8'. OR Titles of 'Car' and 'Before 8' with branch endings of 'Yes' and 'No'.	B1	Accept any unambiguous wording.
Correct probabilities on first pair of branches 0·7 AND 0·3 (for 'Car', 'No car') OR 0·4 AND 0·6 (for 'Before 8', 'After 8')	B1	Must be consistent with their labelling. Allow this B1 if no headings given, unless contradicted by, or inconsistent with, further labelling.
Correct probabilities on second two sets of branches 0·4 AND 0·6 correctly placed (following 0·7 and 0·3) OR 0·7 AND 0·3 correctly placed (following 0·4 and 0·6)	B1	Allow this B1 if no headings given, unless contradicted by, or inconsistent with, further labelling. Allow this B1 if only shown on one set of branches. Provided not contradicted on the other set of branches.
17.(b) $0·7 \times 0·4$ or equivalent. $= 0·28$ or equivalent.	M1 A1	No FT. M1A0 for a final answer of 0·28%. Mark final answer.
18.(a) PA = 12(cm) AND correct theorem given, e.g. 'tangents from an external point are equal in length'.	E1	Must use the words 'tangents' AND 'equal (identical / same)'. Do not accept e.g. 'PA = PB'. (E0) Accept alternative correct answers.
18.(b) PÂO = 90(°) AND correct theorem given, e.g. 'the tangent at any point on a circle is perpendicular to the radius at that point'.	E1	Must use the words 'tangent' AND 'radius (diameter)' Allow e.g. 'radius and tangent meet at 90'. (E1) Do not accept e.g. 'PA and OA meet at 90'. (E0)
18.(c) (Area PAOB =) $2 \times \frac{12 \times 4}{2}$ or equivalent. $= 48 (cm^2)$	M1 A1	OR FT 'their PA' × 4 / 2 + 12 × 4 / 2 M0 for 48×2 or $12 \times 4 \times 2$ (= 96) An unsupported final answer of 48 gains both marks. If no marks gained allow SC1 for sight of 24(cm²) OR a correct evaluation of ('their PA' × 4) / 2.
19.(a) $y = 2·5x + 3$	B1	
19.(b) $y = 3x - 5$	B1	
19.(c) Line D	B1	

19.(a) Correct <u>construction</u> method. e.g. (i) intersecting arcs of radii 6cm and 9cm with centres A and C respectively. OR (ii) copying the angle at B at the point A (will require AB or BA to be extended). Completed parallelogram.	M1 A1	Relevant construction arcs must be seen.
19.(b) 'measured length' × 200 = 1520 (cm) = 15·2 metres	M1 A1 B1	Allow for error in measuring line XY. Accept only in range 1480 to 1560 inclusive. FT 'their 1520' ÷ 100. Unsupported 14·8 to 15·6 inclusive gains all 3 marks.
<u>Alternative method</u> *Sight of scale is 1cm represents 2m* *'measured length' × 2* *= 15·2 metres*	*B1* *M1* *A1*	*Allow for error in measuring line XY.* *Accept only in range 14.8 to 15.6 inclusive.*
20.(a) 9·231	B1	
20.(b) 170	B1	
20.(c) 10	B1	

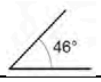
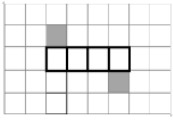
WJEC GCSE MATHEMATICS

AUTUMN 2021 MARK SCHEME

Unit 1: Foundation Tier	Mark	Comments
1.(a) Ninety-five thousand and forty-eight	B1	
1.(b) 931	B1	
1.(c) 1250	B1	
1.(d) 208	B1	
1.(e) 1,2,3,6,9,18	B2	B1 for 4 or 5 correct and 0 incorrect B1 for 5 or 6 correct and 1 incorrect Ignore repeated numbers Accept products 1×18, 2×9, 3×6
2.(a) 94 (mm)	B1	Accept 92 to 96 (mm)
2.(b) 136(°)	B1	Accept 134 to 138 (°)
3.(a) 16	B1	
3.(b) ¾	B1	Mark final answer.
3.(c) 28	B1	
4. 	B2	B1 for correct longer straight line. B1 for correct curve AND shorter straight line. The lines must pass through the correct points.
5.(a) 4.3 x 1000 4300 (g)	M1 A1	
5.(b) 3 × 100 ÷ 6 50 (cm)	M1 A1	If M0 A0, award SC1 for sight of 300(cm) or 0.5(m).
6. 	B1 B1	A should be between 0.6 and 0.8 B should be at 0

16.	Correct reflection in $x = 1$. 	B2	B1 for correct reflection in $y = 1$ OR B1 for sight of line $x = 1$ (must be unambiguous)

18. (Area of rectangle) $48 = 8 \times x$	M1	*Lengths may be shown on the diagrams.*

1.(c) 22	B1	
2.(a) 	B1	
2.(b) 	B1	
2.(c) 	B1	
2.(d) Two squares shaded to form a correct net, e.g. 	B1	One square above the four given squares and one below.

11.(a) $(x =)$ 360 – (115 + 97 + 42) or equivalent. = 106	M1 A1	Check diagram for answer. Note: 360 – 254 Note: Award M1A1 for a correct embedded answer BUT only M1A0 if contradicted by $x \neq 106$.
11.(b) $y = \frac{180 - 78}{2}$ = 51	M1 A1	Check diagram for answer. Note: $\frac{102}{2}$ Award M1 for sight of $78 + y + y = 180$. Note: Award M1A1 for a correct embedded answer BUT only M1A0 if contradicted by $y \neq 51$.

2.(a) pentagon		B1	
2.(b)	radius	B1	

		• use appropriate terminology, units, etc.
3.(a)(i) (regular) hexagon	B1	Do not accept heptagon.
3.(a)(ii) trapezium	B1	
3.(b) cuboid	B1	
3.(c)(i) 2	B1	
3.(c)(ii) 3	B1	

9.		May be seen in stages.
(Area =) $\frac{(15 + 9)}{2} \times 8$ or equivalent	M1	Award M1 for one of the following: • $\frac{(15 - 9) \times 8}{2} + 8 \times 9$ (= 24 + 72) • $15 \times 8 - \frac{8 \times (15 - 9)}{2}$ (= 120 – 24)
= 96	A1	Allow M1A1 for correct intent or complete method seen with correct answer .e.g. 15 + 9 × 8 ÷ 2 = 96
cm^2	U1	Independent of all other marks.

End of solutions