REVISE
.wales

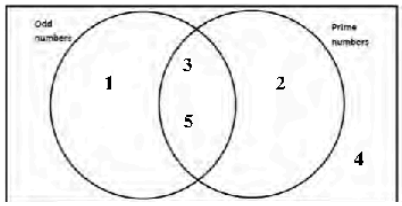
F1.11 — Infographics, schedules, timetables & Venn diagrams

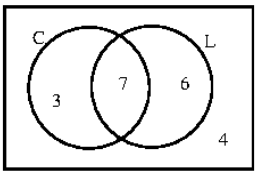
Mark schemes for the F1.11 question pack

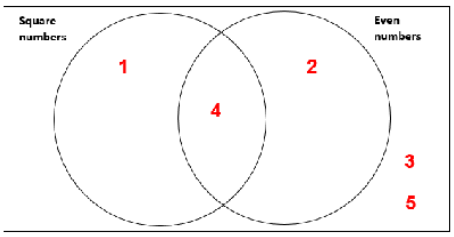
Spec 1.7.1, 1.7.2, 1.7.3 — Unit 1

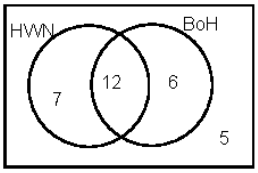
SOLUTIONS · 2025 SPECIFICATION

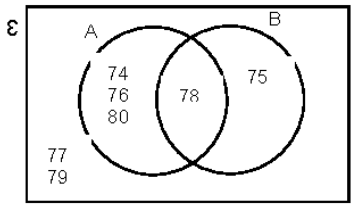
Mark schemes for the 17 questions in the corresponding revise.wales question pack (41 marks total). Sources: legacy WJEC GCSE papers, WJEC SAM, and custom-authored mark schemes. Pack layout © revise.wales.

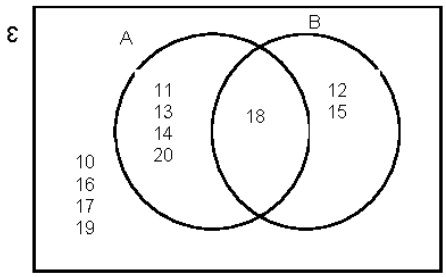
9. 	B2	B2 for all fully correct Award B1 for 3 or 4 correct *Any duplicates are marked as incorrect.*

16.(a)				Any 'blank space' to be taken as 0.
			B1 B1	For the 4 in correct position. For the 7 in correct position.
			B1	For the 3 AND 6 in correct positions. OR two of the following conditions met (i) 10 − 'their (non-zero) 7' (ii) 13 – 'their (non-zero) 7'. (iii) total of four numbers = 20. SC1 for all regions correct but using alternative notation e.g. tallies.
16.(b)	9/20 or equivalent. ISW		B2	B1 for a numerator of 9 (F.T. 'their 3' + 'their 6') in a fraction < 1. B1 for a denominator of 20 in a fraction < 1

5. 	B2	B2 for all fully correct Award B1 for 3 or 4 correct *Any duplicates are marked as incorrect.*

11.(a)			Any 'blank space' to be taken as 0. If 'notches/tallies' are used, penalise −1 once.
	12 AND 5 in correct position. Total of 18 for '*Bread of Heaven*' Overall total of 30.	B1 B1 B1	B0 if any other number written in the same section. Allow more than one number in the same section. Allow more than one number in the same section.
11.(b)	$\frac{19}{30}$ or equivalent. ISW	B2	B1 for a numerator of 19 OR FT 'their total for *HWN*' in a fraction < 1. B1 for a denominator of 30 OR FT 'their total' in a fraction < 1. An answer of 19/30 gains B2 regardless of 'their Venn diagram'.

11.  	B2 B1	Correct groupings of all 7 numbers within and outside the two circles (with or without a rectangle). B1 for 5 or 6 correctly placed numbers. No credit for a number shown in more than one section. Penalise −1, once only, if a number not in the universal set is noted. Ignore labelling for this B2 or B1. (i.e. ignore missing, conflicting or incorrect labels.) *Allow intent of drawing circles and a rectangle.* Two intersecting circles correctly labelled A and B OR 'even numbers' and 'multiples of 3' (but not conflicting labels or labels that conflict number placements) within a rectangle. Allow missing 'Ɛ' symbol.

5.(a) Any correct total of **2**. e.g. 3 + 3 + 3 − 7	B1	B0 if any numbers other than 3 and 7 used. B0 if any operation other than + or – used. e.g. 3 × 3 is not acceptable for 3 + 3 + 3. Allow multi-digit numbers made from 3 or/and 7. e.g. 33, 37, 373 etc.
5.(b) Any correct total of **8**. e.g. 7 − 3 + 7 − 3	B1	B0 if any numbers other than 3 and 7 used. B0 if any operation other than + or – used. e.g. 2 × 7 is not acceptable for 7 + 7. Allow multi-digit numbers made from 3 or/and 7. e.g. 33, 37, 373 etc.
5.(c) Any correct total of **19**. e.g. 3 + 3 +3 + 3 +7	B1	B0 if any numbers other than 3 and 7 used. B0 if any operation other than + or – used. e.g. 4 × 3 is not acceptable for 3 + 3 + 3 + 3. Allow multi-digit numbers made from 3 or/and 7. e.g. 33, 37, 373 etc.
6.  	 B1 B1 B2	*Allow intent of drawing circles and a rectangle.* Two intersecting circles AND labelled A and B AND within a rectangle. Allow missing 'ε' symbol. For unambiguous indication that the set B consists of 12, 15 and 18 only. B0 if any of these numbers are repeated outside B. All eleven numbers in correct position (with or without a rectangle), with no other or repeated numbers. B1 for six to ten numbers in correct position. Repeated numbers should not be credited. Other numbers may be ignored for this B1 mark.
7.(a) 5(2a - 3)	B1	Mark final answer.
7.(b)(i) (x =) 147	B1	Accept embedded answer. Mark final answer.
7.(b)(ii) 13f – 6f = 5 − 2 7f = 3 (f =) 3/7	 B1 B1 B1	F.T. until 2nd error. If FT leads to a whole number answer, it must be shown as a whole number. Otherwise accept a fraction. Mark final answer. Allow 0·43 or 0·429 or 0·428… as a final answer.
7.(c) '5n – 3 can be even or odd' ticked or implied AND a valid explanation given. e.g. '5×3 – 3 = 12 (even) and 5×4 – 3 = 17 (odd)' 'if n is odd you get even (but) if n is even you get odd'	E1	A valid explanation implies '5n – 3 can be even or odd', unless contradicted. Allow e.g. '15 – 3 =12, 20 – 3 = 17'. Allow a correct sequence shown e.g. 2, 7, 12, …. Do not accept 'n can be anything', 'n can be odd or even'. Do not accept an explanation that only uses 5n. e.g. '5 × 2 = 10 (even), 5 × 3 = 15 (odd)'

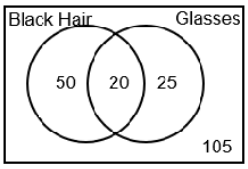
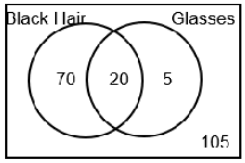
			If all marks gained ISW.
11.(a)	$A \cap B$	B1	
11.(b)	B'	B1	
12 Four numbers with a range of 10. Four numbers with a total of 36. Four numbers with a median of 8. Possible answers for all three marks are 5,5,11,15 or 5,6,10,15 or 5,7,9,15 or 5,8,8,15		 B1 B1 B1	B0 if all four original numbers used.

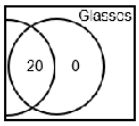
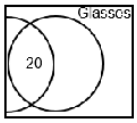
9.(d) $4x = 10 - 7\ (=3)$ $x = \frac{3}{4}$ or equivalent.	B1 B1	FT from $4x = b$. Integer answer required if b is a multiple of 4 Mark final answer. Allow an embedded answer eg $4 \times 0{\cdot}75 + 7 = 10$ for B2, but penalise −1 if contradicted by $x \neq 0{\cdot}75$
10. (Factors of) 16, OR 32, OR 64, … (Multiples of) 4	B1 B1	Accept any multiple of 16 which does not have a factor of 3.
11. 9, 13 and 14 OR 10, 13 and 15 OR 11, 13 and 16 OR 12, 13 and 17	B2	Allow in any order. B1 for 3 whole numbers with a median of 13 OR B1 for 3 whole numbers with a range of 5 Penalise -1 for any repeated numbers. e.g. 8, 13, 13 gains B2 -1 = B1 13, 13, 13 gains B1 -1 = B0.
12.  (Perimeter =) 8×7 + 2×3 (cm) or equivalent (Perimeter =) 62 (cm)	B1 M1 A1	May be implied by correct method which would lead to an answer of 62 (cm). (This is the only diagram which can gain B1.) If no diagram, then B1 M1 A1 for correct calculation which leads to answer of 62 (cm). FT these large rectangles only:  B0 (Perimeter =) 8x3 + 2x7 (cm) or equivalent M1 (Perimeter =) 38 (cm) A1 OR  B0 (Perimeter =) 4x7 + 4x3 (cm) or equivalent M1 (Perimeter =) 40 (cm) A1 If no diagram, allow SC1 for (8x3 + 2x7 or equivalent) = 38 (cm) OR (4x7 + 4x3 or equivalent) = 40 (cm).
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.
13.(a) 20(:)18 OR 8(:)18 p.m..	B1	B0 for (0)8:18 or 8:18 a.m. or 20:18 a.m. Allow 20(:)18 p.m. and 08:18 p.m.

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.

2(a) 20:40	B1	
2(b) 10(:)10 (a.m.) or 'ten past ten' or equivalent	B3	Allow use of decimal point, a gap, no gap as a 'spacer' in time throughout Accept times given in 24hr or a.m. format throughout. B2 for any one of the following: • sight of (0)9(:)48 (tram) • sight of (0)9(:)70 • arrives 5 minutes early (before 10(:)15) • an answer of 10(:)10 p.m. • use of multiples of 12 minutes from 8 a.m. with 8(:)12, 8(:)24 and 8(:)36 seen with an error in working but 22 mins correctly added to their final multiple (which must be between 09:36 and 09:53 inclusive) B1 for any one of the following: • use of multiples of 12 minutes from 8 a.m. with 8(:)12, 8(:)24 and 8(:)36 seen • (tram at) 9(:)00 • 10(:)00 with attempt to subtract 12 minutes • (10:00 tram arrives at) 10(:)22 • 60 ÷ 12 (= 5) or 5 × 12 = 60 • 5 trams per hour (until 10:00) An answer of 10(:)37 is awarded B0 unless any of criteria for B2 or B1 met

5. (Gerry already has) 800 ÷ 10 × 3 (£)240 (Manager gives 25/100 × 800) (£)200 (Need to save) 800 – 240 - 200 or 800 – (240 + 200) = (£)360 (Number of weeks) 5	M1 A1 B1 M1 A1 B2	FT 'their derived 240' AND 'their derived 200'. FT 'their derived 360' if not a multiple of 80 Award B2 only if there are no errors in the required working. Award B1 for any of the following: • 360 ÷ 80 (=4.5) • (360 – 4 × 80 =) 40 • (360 – 5 × 80 =) -40 • (4 × 80 =) 320 • (5 × 80 =) 400 • 4 × 80 AND 5 × 80 or equivalent • *An answer of 4 weeks from using £360* • A correct FT answer where 'their 360' is a multiple of 80
Alternative method for the last 4 marks *(Total received 240 + 200 =) (£)440* *(Number of weeks) 5*	*B1* *B3*	*FT 'their derived 240' and 'their derived 200'* *FT 'their derived 440' if not a multiple of 80 for B3, B2 or B1* *Award B3 only if there are no errors in the required working.* *Award B2 for any of the following:* • *(440 + 4 × 80 =) 760 (multiple below 800)* • *(440 + 5 × 80 =) 840 (multiple above 800)* • *440 + 4 × 80 AND 440 + 5 × 80 or equivalent* • *for an answer of 4.5 weeks* • *A correct FT answer where 'their 440' is a multiple of 80* *Award B1 for any of the following:* • *440 + 4 × 80 or equivalent (the week below 800)* • *440 + 5 × 80 or equivalent (the week above 800)* • *An answer of 4 weeks from use of £440* • *An incorrect FT answer (number of weeks) from 'their 440' counting up correctly in 80s to 2 80s below or at least 2 80s above*
Alternative method for the first 4 or 5 marks if combine the percentages (or equivalent) *(Total percentage given) 25% + 30% or equivalent* *55% or equivalent* *(Total received) 55/100 × 800* *(£)440* *(Need to save 800 – 440=) (£)360*	*M1* *A1* *M1* *A1* *B1*	*FT 'their derived 55%'* *FT 800 - 'their derived 440'*

14.(a)  		If 'notches/tallies' are used, penalise −1 once.
20 AND 105 in correct position Total of 70 for *Black Hair* Overall total of 200	B1 B1 B1	B0 if any other number written in the same section. FT 'their 50' + 'their 20', provided both are non-zero values. Note: The answer below is awarded B1B0B1. 

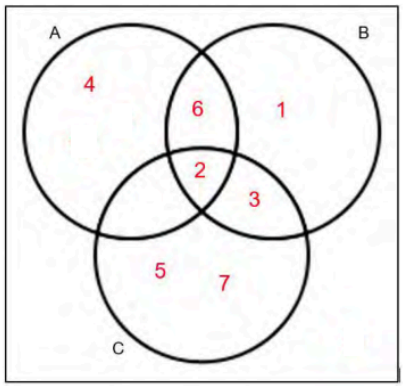
14.(b)	$\frac{45}{200}$ or $\frac{9}{40}$ or equivalent. ISW	B2	For B2 or B1, the numerator and denominator must be a whole number. FT $\frac{\text{'their 20'} + \text{'their 25'}}{200}$ provided both sections not blank. Award B1 for one of the following: • a numerator of 45 in a fraction < 1 • FT 'their 20' + 'their 25', provided both sections are not blank, as a numerator in a fraction < 1 • a denominator of 200 in a fraction < 1. An answer of $\frac{45}{200}$ gains B2 regardless of 'their Venn diagram'. Penalise incorrect notation (e.g. '45 in 200') −1. Note:  An answer of $\frac{20}{200}$ is awarded B2.  An answer of $\frac{20}{200}$ is awarded B1.

8. (Volume of cuboid = $4 \times 5 \times 20$ =) 400 (cm^3)	B1	Award B0 if 400 has come from incorrect working or if subsequent working is seen (e.g. finding the total surface area or $4 \times 5 \times 20 = 400$, $400 \times 2 = 800$).
(Volume of cube = $3 \times 3 \times 3$ =) 27 (cm^3)	B1	
(Number of cubes =) $\frac{4 \times 5 \times 20}{3 \times 3 \times 3}$ or equivalent	M1	FT 'their 400' ÷ 'their 27', provided 'their 27' ≠ 3 and that **B1 has previously been awarded or $4 \times 5 \times 20$ and $3 \times 3 \times 3$ seen.**
= 14·8(.....)	A1	May be implied in the final answer.
(Number of complete cubes =) 14	B1	FT only if truncation required. If $\frac{4 \times 5 \times 20}{3 \times 3 \times 3}$ = 14 (complete cubes) is seen, then award B1 B1 M1 A1 B1.
8. 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

17. (Volume of cuboid = $4 \times 5 \times 20$ =) 400 (cm^3)	B1	Award B0 if 400 has come from incorrect working or if subsequent working is seen (e.g. finding the total surface area or $4 \times 5 \times 20 = 400$, $400 \times 2 = 800$).
(Volume of cube = $3 \times 3 \times 3$ =) 27 (cm^3)	B1	
(Number of cubes =) $\frac{4 \times 5 \times 20}{3 \times 3 \times 3}$ or equivalent	M1	FT 'their 400' ÷ 'their 27', provided 'their 27' ≠ 3 and that **B1 has previously been awarded or $4 \times 5 \times 20$ and $3 \times 3 \times 3$ seen.**
= 14·8(.....)	A1	May be implied in the final answer.
(Number of complete cubes =) 14	B1	FT only if truncation required. If $\frac{4 \times 5 \times 20}{3 \times 3 \times 3} = 14$ (complete cubes) is seen, then award B1 B1 M1 A1 B1.

7.(a) $3k$	B1	Mark final answer
7.(b)(i) (x =) 45	B1	Accept embedded solutions unless contradicted by later working. Mark final answer
7.(b)(ii) (y =) 11	B1	Accept embedded solutions unless contradicted by later working. Accept x instead of y. Mark final answer
7.(b)(iii) (w =) 9	B1	Accept embedded solutions unless contradicted by later working. Accept x instead of w. Mark final answer

11.(a)	0·27 or equivalent.	B2	Mark final answer. Allow ±0·27 OR (+)0.27 'and/or' –0.27. Award B1 for sight of one of the following: • 0·27 (or equivalent) followed by subsequent working • –0·27 • 0·0729.
11.(b)	8	B1	Answer line takes precedence. Allow embedded answer in working space provided not contradicted on answer line.
11.(c)	7	B1	Answer line takes precedence. Allow embedded answer in working space provided not contradicted on answer line.

9. 		Ignore numbers crossed out. Numbers repeated in more than one subset, 0 or numbers greater than 7 should not be credited. Allow repeated numbers in the same subset.
	B4	Award B4 for correct answer only (all 7 numbers in correct position with no other or repeated numbers). Award B3 for one of the following: • 7 numbers in correct position with other numbers • 5 or 6 numbers in the correct position Award B2 for 3 or 4 numbers in correct position. Award B1 for 2 numbers in the correct position.

End of solutions