REVISE
.wales

F1.13 — Time, dates & 24-hour clock

Mark schemes for the F1.13 question pack

Spec 3.5.1, 3.5.3, 3.5.4, 3.5.5 — Unit 1

SOLUTIONS · 2025 SPECIFICATION

Mark schemes for the 17 questions in the corresponding revise.wales question pack (37 marks total). Sources: legacy WJEC GCSE papers, WJEC SAM, and custom-authored mark schemes. Pack layout © revise.wales.

16.(b) $a + b + c + d + e = 360^o$	B1	
17. An attempt to find the total of the four time periods. (Sum of time periods =) 18(hr) 56(min) OR 1136(min) ÷ 4 = 4 hours 44 minutes	M1 A1 m1 A1	Allow any convincing attempt. A total has to be found. e.g. sight of 18·16 or 18h 16min etc. Not enough to simply list e.g.5 20 + 2 44 + 6 18 + 4 34 C.A.O. Allow 18·93(…)(hr) but mark final answer. FT for m1, only if 'their sum of time periods' is between 17h (1020min) and 21h (1260min) inclusive. Allow FT A1 only if the sum of their time period is *x* hrs *y* min where x is not a multiple of 4 and y ≠ 0. OR the sum of their time period is t minutes, where t is not a multiple of 60. Sight of 284 (min) implies M1A1m1. Note 1: If time is incorrectly added as 'decimals'. 18·16 or 18h 16min is M1A0. Further work of 18·16 ÷ 4 = 4·54 (or 4h54m) is m1A0 BUT 18h 16m ÷ 4 = 4h 34m is m1A1 (FT) Note 2: Incorrect use of calculator. e.g. M1A0m1A0 for sight of 930·5(min) (From 320 + 164 + 378 + 274 ÷ 4)
Alternative method *Attempt to add time periods as 'hours + min'* *17hours (+) 116 minutes* *÷ 4* *4 hours 44 minutes*	*M1* *A1* *m1* *A1*	*FT for m1, only if 'their sum of time periods' is between 17h (1020min) and 21h (1260min) inclusive.*

10.(a) 1, 4 and 25	B3	Answer space takes precedence. Accept 1^2, 2^2 and 5^2. B2 for writing three numbers which add to 30, two of which are square (e.g. 16, 9, 5). B1 for writing three numbers: • at least two of which are square, OR • which add to 30, one of which is square, OR • which are all square. SC2 for an answer of 1, 2 and 5 with correct working. SC1 for an unsupported answer of 1, 2 and 5
10.(b) 1, 5, 7, 7 OR 3, 5, 7, 7	B3	Answer space takes precedence. B2 for writing four odd and positive numbers (not 7, 7, 7, 7) which fulfil one of the conditions: • the mode of the numbers is 7 • the median of the numbers is 6 OR for an answer which satisfies both conditions but includes an even number (e.g. 2, 5, 7, 7) B1 for writing four numbers which fulfil only one of the conditions: • the mode of the numbers is 7 • the median of the numbers is 6 OR for an answer of 7, 7, 7, 7.
11.(a) 0·125 × 1176 or equivalent. = 147 ISW	M1 A1	
11.(b) 4·7	B2	If further incorrect work shown e.g. '4·7 = 5' then allow B1 only. B1 for sight of 4·6 or 4·68(…..) or 4·70
12. f = 73(°) g = 128 – 73 = 55(°)	B1 M1 A1	F.T. 128 − 'their f'.
Alternative method f = 73(°) *g = 180 – (180 −128) – 73* *= 55(°)*	*B1* *M1* *A1*	*FT 'their f'.*
13. (1) **5** (9) (7) (8) **2** **9** (4) (1)	B3	B1 for each. No F.T.
14.(a) $\frac{1}{12}$	B1	
14.(b) D	B1	
14.(c) $\frac{1}{3}$	B1	
15. Sight of 6·25 (hrs) OR 375 (min) (Planning =) $\frac{2}{5}$ × 6·25 OR $\frac{2}{5}$ × 375 = 2·5 (hrs) OR 150 (min) (Remainder of work = 6·25 − 2·5 OR 375 – 150 =) 3·75 (hrs) OR 225 (min) = 3 hours 45 minutes	B1 M1 A1 B1 B1	F.T. 'their time' in hours or in minutes. May be seen in parts (1/5th and then 2/5ths) [Note: 2/5 × 6·15 OR 2/5 × 615 is B0M1(FT) = 2·46(hrs) OR 246(min) A1(FT) BUT A0 if 2·46 then used as 2h 46m] F.T. 'their derived times' using same units. F.T. correct conversion of 'their times', correct to the nearest minute (rounded or truncated), if of equivalent difficulty. Allow unambiguous indication of units.

WJEC GCSE MATHEMATICS

AUTUMN 2020 MARK SCHEME

GCSE Mathematics Unit 1 Intermediate Tier		Mark	Comments
1.(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.
1.(b)	6 (hours) 40 (minutes)	B1	
1.(c)	265 (seconds)	B2	B1 for sight of 435 AND 170 OR B1 for sight of 300 AND 35 OR B1 for 4 minutes 25 seconds.
2.(a)	Line x = −4 drawn	B1	Line must be at least 2 units long. B0 if 'extra' lines drawn unless correct line unambiguously identified.
2.(b)(i)	Point C shown at (−2,−4)	B2	Allow B2 if point C not labelled but is unambiguously at the correct position (eg 'end of line') Otherwise, B1 if Point C at (−2,y) y≠3. (BÂC = 90°) SC1 for point C at (5,−4).
2.(b)(ii)	(−2,−4)	B1	FT 'their unambiguously identified position of point C'. Allow missing brackets.
3.(a)(i)	2700	B2	B1 for sight of 27 OR sight of 100. Mark final answer.
3.(a)(ii)	0·08	B1	Mark final answer
3.(a)(iii)	Correctly using a common denominator. 13/18 or equivalent.	M1 A1	Mark final answer.
3.(b)	0·05	B1	
4.	<table><tr><td>Answer</td><td>Yes</td><td>No</td><td>Not sure</td></tr><tr><td>Number of students</td><td>150</td><td>50</td><td>100</td></tr></table>	 B3	B1 for (Yes =) 150 C.A.O. B2 for (No =) 50 AND (Not sure =) 100. or FT 'their Yes' for (No =) ⅓(300 − 'Yes') AND (Not sure =) ⅔(300 − 'Yes') If B2 not gained, then B1 for (No =) 50 OR (Not sure =) 100 or FT 'their Yes' for (No =) ⅓(300 − 'Yes') OR (Not sure =) ⅔(300 − 'Yes') or B1 for 'No' + 'Not sure' = 150 or B1 if 'Not sure' = 2 × 'No'. or B1 for 'Yes' + 'No' + 'Not sure' = 300.
5.(a)	4x = 10 − 7 (=3) x = 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 × 0·75 + 7 = 10 for B2, but penalise −1 if contradicted by x ≠ 0·75
5.(b)	5d − 2e	B2	Must be an expression for B2. B1 for sight of (+)5d OR sight of − 2e. B1 for 5d + − 2e. Mark final answer.
6.	a = 113 b = 67 c = 113	B1 B1 B1	C.A.O. OR FT 180 − 'their a'. OR FT = 'their a' OR FT 180 − 'their b'.
7.	AB = 13 (cm) (Area =) 13 × 13 = 169 (cm²)	B1 M1 A1	For any indication that side of square = 13 (cm). May be seen on the diagram. No FT (but note SC1). C.A.O. Unsupported 169 (cm²) gains all 3 marks. If no marks gained award SC1 for a final answer of144 (cm²)

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.

5.(a) (0)7:45 23 (March)	B2	B1 for each. B0 for (0)7:45 p.m.
5.(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.*
6. Correct strategy of √(Area ABCD – 32) (Area ABCD =) 81 (cm^2) (Area PQRS = 81 – 32 =) 49 (cm^2) (PQ = √49 =) 7 (cm)	S1 B1 B1 B1	FT 'their stated area of ABCD' – 32. FT √'their stated area of PQRS' but not √32 or √9 A final answer of 7(cm) gains all four marks. May be seen on the diagram. (FT answers must be rounded or truncated to 1dp or more)
7.(a) 1·442	B2	B1 for sight of 1·44(1……) or 1·44(2……)
7.(b) 191	B3	B2 for sight of 190(·5…..) or 190·6 B1 for sight of 280.
8. (P(Gold) =) 1 – 0·68 – 0·22 = 0·1 22 people choose silver AND 10 people choose gold (Profit =) 100 × (£)2 – 22 × (£)3 – 10 × (£)8 = (£)54	M1 A1 B1 M1 A1	 May be seen in the table. FT 100 × 'their 0·1'. The 10 implies previous M1A1. The 22 and 10 may be seen in further work. FT 'their stated number of winners (silver and gold)'.
Alternative method1 *(P(Gold) =) 1 – 0·68 – 0·22* *= 0·1* *22 people choose silver AND 10 people choose gold* *(Profit =) 68 × (£)2 – 22 × (£)1 – 10 × (£)6* *= (£)54*	*M1* *A1* *B1* *M1* *A1*	 *May be seen in the table.* *FT 100 × 'their 0·1'. The 10 implies previous M1A1.* *The 22 and 10 may be seen in further work.* *FT 'their stated number of winners (silver and gold)'.*
Alternative method 2. *(P(Gold) =) 1 – 0·68 – 0·22* *= 0·1* *(Profit per game =)(£)2 – 0·22 × (£)3 – 0·1 × (£)8* *= (£)0·54* *(Total profit = £0·54 × 100 =) (£)54*	*M1* *A1* *M1* *A1* *B1*	 *May be seen in the table.* *FT 'their 0·1.* *FT 'their derived £0·54'.*
Alternative method 3. *(P(Gold) =) 1 – 0·68 – 0·22* *= 0·1* *(Profit per game =)0·68×(£)2 – 0·22×(£)1 – 0·1×(£)6* *= (£)0·54* *(Total profit = £0·54 × 100 =) (£)54*	*M1* *A1* *M1* *A1* *B1*	 *May be seen in the table.* *FT 'their 0·1.* *FT 'their derived £0·54'.*
9.(a) −1·3 0·4 2·1	B2	B1 for two correct in the correct position. OR for −3, −1·3, 0·4.
9.(b) 10(th term)	B1	Allow B1 for 10(th) and 14. B0 if only 14 given in answer space. NOTE: If answer to 9(a) is −3, −1·3, 0·4 then allow an answer of 11(th term)

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.*

5.(a) 5 hours 45 minutes OR 5 ¾ hours OR 345 mins	B1	Allow incorrect notation, e.g. 5:45 or 5.45
5.(b) 6 small triangles shaded	B1	

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

<table>
<tr>
<td>4(a) (Time difference) 5 hours
17:40 + 9 hours 15 minutes + 5 hours

Tuesday 07(:)55 or Tuesday (0)7(:)55 a.m.</td>
<td>B1
M1

A2</td>
<td>Seen or implied
FT adding ‘their 5 hours’, provided ‘their 5 hours’ ≠ 0 or negative
May be seen in stages

Answer space takes precedence unless unambiguously time in the morning from working
A1 for the correct time, 07(:)55 or (0)7(:)55 a.m. or ‘Tuesday 7(:)55’ or ‘Tuesday (0)7(:)55 p.m.’

<u>Special cases and/or implied 5 hours:</u> provided not from incorrect working

<table>
<tr><td>Monday 21:55 (p.m.)</td><td>B1 SC1</td></tr>
<tr><td>Monday (0)9(:)55 p.m.</td><td>B1 SC1</td></tr>
<tr><td>Monday (0)9(:)55</td><td>B1</td></tr>
<tr><td colspan="2"><u>If no marks:</u></td></tr>
<tr><td>Tuesday (0)2(:)55</td><td>SC1</td></tr>
<tr><td>Tuesday (0)2(:)55 a.m.</td><td>SC1</td></tr>
</table>

No marks for Monday (0)9(:)55 a.m. or Tuesday 2(:)55 p.m.</td>
</tr>
<tr>
<td>4(b)(i) (Time for remaining 60 miles is) 60 ÷ 40
1 hour 30 minutes or 1.5 (hours) or 90 (minutes)</td>
<td>M1
A1</td>
<td>
Mark final answer, ignore continuation to give the total time, 2.5 hours
If units are given they must be correct

A0 for 1.3(0) (hours) or 1 30 (hours) or 1:30 (hours) or 1 hour 5 minutes</td>
</tr>
<tr>
<td>4(b)(ii)
$\frac{80}{1(\text{hrs}) + 1.5(\text{hrs})}$ or $\frac{80}{60\ (\text{mins}) + 90\ (\text{mins})}$.

$\frac{80}{2.5}$ or $\frac{80}{150} \times 60$

32 (mph)</td>
<td>M1

m1

A1</td>
<td>FT from (b)(i) the final answer for ‘their time’
Within appropriate calculation allow
• sight of 30 + 60 for 90 (mins)
• with incorrect notation for 1.5 hours including as 1.3

Time notation must be correct
Only FT if ‘their time’ from (b)(i) is not a whole number of hours

CAO, not from incorrect working
Answer space takes precedence</td>
</tr>
</table>

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'*

		• use appropriate terminology, units, etc
6.(a) Bars drawn correctly, 8 for rabbit and 1 for hamster.	B2	For B2, bars must be two squares wide. Condone inconsistent gap between bars. B1 for one of the following: • any indication of 8 rabbits and 1 hamster • any indication of 9 rabbits and 0 hamsters (if drawn on bar chart, the 9 must be unambiguous).
6.(b) $\frac{7}{22}$ ISW	B2	B1 for one of the following: • a numerator of 7 in a fraction < 1. • a denominator of 22 in a fraction < 1.

18. $\frac{\pi \times r^2}{2} = 77$ or equivalent	M1	Check diagram for answers.
$r^2 = 49(\cdot 0\ldots)$ or $r^2 = \frac{154}{\pi}$	m1	Sight of $49(\cdot 0\ldots)$ implies M1m1.
$r = 7(\cdot 0\ldots)$	A1	FT 'their r^2' provided M1 awarded. 7 must not be from incorrect working.
(Area of trapezium =) $\frac{2 \times 7(\cdot 0\ldots) + 22}{2} \times 7(\cdot 0\ldots)$ or equivalent	M1	FT 'their derived or stated r'.
$= 126\cdot 0(\ldots)(\text{cm}^2)$	A1	Accept $126\cdot 1$ or 126 (cm^2) Mark final answer.

2(a)(i) 08:22 or 8:22 (a.m)	B2	Allow 08:22 a.m Allow 08:22 – 08:47 as an indication that it is the 08:22 train from Bridgend. Allow indication that it is the train that **arrives** at Cardiff at 08:47 or **arrives** at Cardiff at 8:47 (a.m) Award B1 for • (0)8:22 p.m • sight of (0)8:50 (a.m) • (0)8:47 (a.m) (i.e. doesn't state that it arrives at Cardiff at (0)8:47 a.m) • (0)8:57 (a.m)

2(a)(ii) (0)8:26 (a.m.) AND 28 mins	B3	Answer lines take precedence Workings may be seen in or by the table If B3 not awarded: Award B2 for: • (0)8:26 (a.m.) • 28 mins • If both answer lines are incorrect or no answer is given, then award B2 for sight of all 4 times for the length of journey with up to **one error** (i.e. 4 correct or 3 correct and 1 incorrect) OR 3 correct times for the length of journey with **one omission**. Award B1 for any one of the following seen: • (0)7:43 (a.m.) AND 25 mins • (0)7:53 (a.m.) AND 20 mins • (0)8:22 (a.m.) AND 25 mins • (0)8:26 p.m.
2(b) (Caz's Café = (£2.49 + 95p + 80p) × 5 or equivalent (£)21.2(0) (Simon's Sandwiches 3.50 × 5 =) (£)17.5(0) (Saving 21.20 – 17.50 =) (£)3.7(0)	 M1 A1 B1 B1	Treat use of 7 days as a misread. (4.24 × 5) If M0 A0 award SC1 for sight of (£)4.24 FT 'their **stated or derived** 21.20' – 'their **stated or derived** 17.50' provided at least one mark previously awarded and not any value given in the question used and 2 costs have been stated or calculated and the saving is > 0. Misuse of units can be penalised in OCW
2(b) Alternative method *(Saving per day) (£)2.49 + 95(p) + 80(p) – (£)3.5*(0) *74(p) or (£)0.74* *(Savings for the week) 5 × 74(p)* *(£)3.7*(0)	 *M1* *A1* *M1* *A1*	*Treat use of 7 days as a misread.* *(£)4.24 – (£)3.50* *Allow for sight of 0.74 or 74* *If M0 A0 award SC1 for appropriate sight of (£)4.24* *FT 5 × 'their 74(p)' provided M1 previously awarded* *Misuse of units can be penalised in OCW*
2(b). 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.

9(a)(i) Entries 146 and 160 in the table and the cumulative frequency diagram completed correctly (correct plots (11, 146) and (13, 160) and all plots joined)	B2	B1 for any one of the following: • 146 and 160 in the table, correct plots but **not** joined • 146 and 160 in the table, with one correct plot and one incorrect plot in completing the **cumulative** frequency diagram with plots joined • one error in the table, including FT 'their 146' + 14 and these **cumulative** entries used correctly to complete the **cumulative** frequency diagram with plots joined • correct cumulative frequency diagram with plots joined, with incorrect, incomplete or not attempted entries in the table
9(a)(ii) 8.2 to 8.4 (minutes)	B1	Answer space takes precedence Allow 8 minutes 12 seconds to 8 minutes 24 seconds FT reading from the graph for 'their median', from ½ × 'their 160', provided 'their 160' ≥ 110, with a tolerance of ½ small square from 'their **cumulative** frequency graph', provided it is possible to read 'their median' from the vertical axis on the graph paper provided
9(a)(iii) 7.2 minutes	B1	Answer space in the statement takes precedence, if blank award for indication of '7.2' (circled) in the list Allow '7' in the answer space provided 7.2 indicated in the list Do not accept '8' in the answer space if 7.2 indicated in the list
9(a)(iv) $\frac{20}{160}$ (× 100) or $\frac{1}{2}$ × 25 (%) or equivalent 12.5 (%) or 12½ (%)	M1 A1	FT for (100 ×) 20/'their 160', provided 'their 160'> 106 On FT allow rounding or truncation to 1 decimal place
9(b) (Costs are 180 + 220) (£) 400 **AND** (Profit is 700 – 180 – 220) (£) 300 **OR** (Receipts / Costs =) $\frac{700}{400}$ (× 100) (Percentage profit is) $\frac{300}{400}$ (× 100) or $\frac{700}{400}$ (× 100) – 1 (× 100) 75 (%)	B1 M1 A1	May be embedded, e.g. 700 – 400 = 300 (= 1.75 or 175%) FT 'their 400' and 700 – 'their 400' provided their costs or profit are ≠ 180, ≠ 220 and ≠ 700 CAO Allow if all costs and the total are consistently multiplied by 3.
9(c) 8(.)40 ÷ 1(.)20 or 8(.)40 – 8(.)40 ÷ 6 or equivalent (£) 7 or 700 (p)	M1 A1	Accept a **complete** and **convincing** method of trial and improvement If units are given they must be correct Sight of 7 + 1.40 = 8.40 is awarded M1 A0 unless (£)7 is selected

16. (Time difference =) 16 (hours) or 960 (minutes)	B1	
(One third of 16 hours =) $\frac{1}{3}\times$ 16 (hours) or $\frac{1}{3}\times$ 960 (minutes) or equivalent	M1	FT 'their time difference' only if not a multiple of 3 hours.
5 (hours) 20 (minutes)	A1	Answer must be in hours and minutes for A1. Accept rounded or truncated answers. Award B1 M1 A0 for a final answer of one of the following: • 5⅓ (hours) • 5·33(…hours) • 5·20 • 5:20 • 320 (minutes). An unsupported answer of 5 (hours) 20 (minutes) is awarded B1M1A1.

5(a) 45 (minutes)	B1	Do not accept 0.75 hours Answer space takes precedence
5(b) 15:00	B1	
5(c) 25 (km)	B1	Answer space takes precedence
5(d) 9 (minutes)	B1	Allow 8.5 to 9.5 minutes Answer space takes precedence

10(a)(i) States 80 (and) 100 (seconds) AND indicates 'Yes'	B1	Allow written as 100 and 80 Answer space takes precedence
10(a)(ii)I. (80 – 75 =) 5 (seconds)	B1	Not from incorrect working Answer space takes precedence
10(a)(ii)II. Answer in the inclusive range 12 to 14 (seconds)	B2	Allow in this range only provided it not from incorrect working Answer space takes precedence B1 for sight of 92 – 60 (– 20) to 94 – 60 (– 20) or 32 (–20) to 34 (– 20)

10(b) 96 (seconds)	B3	Answer space takes precedence B2 for sight of or indication of 64 (squirrels), B1 any one of the following: • for sight of or indication of 16 (squirrels) • (use of 16 squirrels) answer of 52 (seconds) B0 for 64 seconds from incorrect working, 20% of 120 = 24, with time 64 seconds B0 for 96 seconds from incorrect working, 80% of 120 = 96, with time 96 seconds
10(c) (24 ÷ 21 500) × 1 000 000 (squirrels per km^2)	M2	Accept using estimation: (24 ÷ 20 000) × 1 000 000 M1 for any one of the following, including if embedded: • 24 ÷ 21500 (= 0.001116… squirrels per m^2) • (estimate) 24 ÷ 20 000 (= 0.0012 squirrels per m^2) • 1 000 000 ÷ 21 500 (= 46.5….) • (estimate) 1 000 000 ÷ 20 000 (= 50)
1116(.27...) (squirrels per km^2) AND Conclusion indicated or unambiguously implied 'Oak'	A1	Accept 1200 from estimating, i.e. (24 ÷ 20 000) × 1 000 000 =1200 (squirrels per km^2) If no marks, award SC1 for appropriate sight of a calculation of 24 ÷ 'a number with only non-zero digits 215', provided not embedded in further working apart from multiplication or division by powers of 10
10(c) Alternative method *(If **oak**, number of squirrels likely in Maesgwyn Forest) 21 500 × 1200 ÷ 1 000 000*	*M2*	*Allow M2 for (If chestnut) 21 500 × 100 ÷ 1 000 000 (= 2.15)* *or (if pine) 21 500 × 45 ÷ 1 000 000 (= 0.9675)* *M1 for any one of the following, including if embedded:* • *(if oak) 21 500 × 1200 (= 25 800 000)* • *(If chestnut) 21 500 × 100 (= 2 150 000)* • *(if pine) 21 500 × 45 (= 967 500)* • *21 500 ÷ 1 000 000 (= 0.0215)* • *20 000 ÷ 1 000 000 (= 0.02)*
25.8 (squirrels) AND 'Oak' indicated as conclusion	*A1*	*Allow from correct working either* *2.15 (squirrels for Chestnut so must be) Oak, or* *0.9675 or 1 (squirrels for Pine so must be) Oak* *If no marks, award SC1 for appropriate sight of **any 1** of the following calculations:* • *'a number with only non-zero digits 215' × 1200* • *'a number with only non-zero digits 215' × 45* *provided not embedded in further working apart from multiplication or division by powers of 10*