REVISE
.wales

F1.15 — Compound measures — speed & fuel consumption

Mark schemes for the F1.15 question pack

Spec 3.5.8 — Unit 1

SOLUTIONS · 2025 SPECIFICATION

Mark schemes for the 9 questions in the corresponding revise.wales question pack (17 marks total). Sources: legacy WJEC GCSE papers, WJEC SAM, and custom-authored mark schemes. Pack layout © revise.wales.

Alternative method 2 *. Indicates 2 (letters out of 6 gain points)* *(Expected number of wins =) $\frac{2}{6} \times 24$ or equivalent* *= 8* *(Number of wins required =) $\frac{100}{10}$* *= 10 (wins) AND* *'No' (Leah is not expected score 100 points)*	*B1* *M1* *A1* *M1* *A1*	*Any unambiguous indication.* *FT 'their stated number of '10 point' letters'.* *Award M1A1 for 8/24 suggesting '8 wins out of 24'* *FT their derived number of expected wins.* *Note for Alternative method 2* *If 'number of wins required' is calculated before calculating 'number of expected wins' then the conclusion ('AND') will be attached to the 8 rather than the 10.*
OCW 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
7. $4x + 5 = 57$ or equivalent $4x = 52$ $x = 13$	M1 A1 A1	 FT from $4x = k$. Accept $x = k/4$ (but, if on FT k is a multiple of 4, final answer must be given as a whole number.) M1A1A0 for '$x = 52/4$' Mark final answer. Allow (M1)A1A1 for a correct embedded answer BUT only (M1)A1A0 if contradicted by $x \neq 13$.
8. 3, 4, 4, 9 OR 3, 3, 5, 9.	B3	B1 for a range = 6. B1 for a total = 20. B1 for a median = 4. Penalise use of negative or non-integer values −1. FOUR numbers must be shown, otherwise B0.
9.(a) $\frac{54}{300} \times 100$ or equivalent = 18(%)	M1 A1	Allow sight of 18/100 or 0·18 for M1. M0 for 54/300 alone.
9.(b) Use of Distance / Time $\frac{100}{2{\cdot}5}$ or equivalent = 40 (mph)	M1 M1 A1	Allow M1 even for e.g. 100 / 2·3(0) or 100/150. C.A.O.
10. (a + b = 180 – 25) = 155 (a =) $\frac{155}{5} \times 2$ OR (b =) $\frac{155}{5} \times 3$ or equivalent a = 62(°) AND b = 93(°)	B1 M1 A1	B1 for sight of 155 FT 'their stated 155'. Allow M1A0 if the angles are reversed and not corrected.

<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(a) a = 54° b = 54° c = 78°	 B1 B1 B1	Answer spaces take precedence, if blank check the diagram FT 'their a' FT 132 – 'their a' or 132 – 'their b'

5(b)(i) (Number of revolutions is) $\frac{1000}{\pi \times 29 \div 12}$ or $\frac{1000 \times 12}{\pi \times 29}$ or equivalent	M3	Complete method May be seen in stages M2 for any one of the following, or equivalents: • $\pi \times 29 \div 12$ • $\frac{1000}{\pi \times 29}$ • $\frac{\pi \times 29}{1000 \times 12}$ • $\frac{1000}{\pi \times (29 \div 2) \div 12}$ • $\frac{1000}{\pi \times (2 \times 29) \div 12}$ M1 for any one of the following, that may be embedded in other working: • $29 \div 12$ (= 2.4(1666…)) • 1000×12 (= 12000) • $\pi \times 29$ (= 91.06 to 91.118) • $\frac{1000}{\pi \times n \div 12}$ where $n \neq 0$, e.g. $1000 \times 12 \div (\pi \times 29^2)$ • $\frac{1000}{29 \div 12}$ (= 413.79…) • $1000 \times 12 \div 29$ (= 413.79…)
Answer in the inclusive range 131 to 132 (revolutions)	A1	CAO
5(b)(ii) (10 ×) 29 × 30 ÷ 12 or equivalent or for an answer of 72.5	M2	Allow embedded with an incorrect change of units Allow (10 ×) 2.4(16…) × 30 M1 for any one of the following: • 30 ÷ 12 (= 2.5) • 29 ÷ 12 (= 2.4166…) • sight of 2.4, 2.41, 2.416(6…) or 2.42 • sight of (1 inch =) 2.5 (cm)
725 (mm)	A1	Answer space takes precedence Allow answers in the range 720 (mm) to 726 (mm) from premature approximation, not from incorrect working
5(c) (Average speed in km/h =) $\frac{48}{1.5}$ or equivalent	M2	M1 for sight of $\frac{48}{1.3}$ or $\frac{48}{90}$ or for answers of 36.9(…) or 37 or 0.53(33...)
32 (km/h)	A1	CAO. Answer space takes precedence

Unit 2: Intermediate Tier	Mark	Comments
1. (Amount needed to save after next week) (£)510 – 165 or (£) 510 – (95 + 70) or (£) 510 – 95 – 70 (=£345)	M2	May be seen in stages Allow missing brackets provided not contradicted in further working M1 for sight of any one of • 510 – 95 (= £415) • 510 – 70 (= £440)
(Amount to save per week £) ÷ 12	m1	Depends on at least M1 previously awarded
(£) 28.75	A1	CAO. ISW FT provided at least 2 marks previously awarded • FT from M1 m1 for A1: o 415 ÷ 12 = (£)34.58(333…) or (£)34.59 o 440 ÷ 12 = (£)36.66(666..) or (£)36.67 • FT from M2 m0 for A1: o 345 ÷ 13 = (£)26.53(8….) or (£)26.54 o 345 ÷ 11 = (£)31.36(36…) or (£)31.37 If no marks, award any one of the following:

SC2	(£)28.75 < answer ≤ (£)29, from supporting working, e.g. 12 × 29 + 95 + 70 = (£)513
SC1	(£)28.75 < unsupported answer ≤ (£)29
SC1	answer (£)13.75 from 165 ÷ 12
SC1	answer (£)42.50 from 510 ÷ 12

2(a) 15(:)00 or 3 p.m.	B1	Allow 15(:)00 pm, 3(:00) or 3 o'clock Do not accept 15(:)00 am, 3 a.m, 03:00 (p.m)
2(b) 14 (km)	B1	
2(c) 12:00 to 12:30	B1	

5(a) 15(:)00 or 3 p.m.	B1	Allow 15(:)00 pm, 3(:00) or 3 o'clock Do not accept 15(:)00 am, 3 a.m, 03:00 (p.m)
5(b) 14 (km)	B1	
5(c) 12:00 to 12:30	B1	

Unit 2: Foundation Tier	Mark	Comments
7(a)(i) 133 × 8 1064 (miles)	M1 A1	Mark final answer. Allow 1064 km
7(a)(ii) 8 × 60 480 (mph)	M1 A1	FT from (a)(i) 60 × 'their 1064' ÷ 133 or 'their 1064' ÷ $\frac{133}{60}$ or 'their 1064' ÷ 2.2(166…) Allow A1 for 479 (mph) < answer ≤ 483.64 (mph) from 1064 ÷ 2.2(1666…) rounded or truncated to at least 1 d.p. or similar for a correctly evaluated 'their 1064' ÷ 2.2(166..)
7(b) 55 × 40 × 23 50 600 (cm^3) or 50 600 ml or 50.6 litres Unambiguously implies 'Yes' with one of the following: • (48 litres =) 48 000 cm^3 • 50.6 (litres) • a suitable appropriate statement, e.g. '50 litres is more than 48 litres'	M1 A1 E1	FT from M1 A0 provided appropriate conclusion and conversion is shown Allow 'Yes' with clear **use of** 1 litre = 1000 cm^3, e.g. • (48 litres is less than) 50(.6 litres) • 50(.6 litres is greater than 48 litres) • 50 000 (cm^3) is greater than 48 000 (cm^3)
7(c) a = 43(°) b = 137(°) c = 112(°) d = 112(°)	B1 B1 B1 B1	 FT b = 180 - 'their a', provided 'their b' > 90 and 'their b' ≠ 112 FT 360 – (68 + 'their a' + 'their b'), provided: • 112 < 'their a' + 'their b' < 202 • c ≠ 137 • their c' ≠ 'their b' FT d = 'their c', provided 90 < 'their c' < 180

Unit 1: Intermediate Tier	Mark	Comments
8(a)(i) 200 – 80 or 90 + 30 120 (customers)	M1 A1	
8(a)(ii) 32 seconds	B1	
8(a)(iii) $\frac{200-170}{200}$ or $\frac{30}{200}$ or $\frac{15}{100}$ $\frac{3}{20}$	M1 A1	Award M1 for 0.15 or 15% Only ignore further working if written as 0.15 or 15% If no marks, award SC1 for an answer of $\frac{17}{20}$ (from 40 seconds or less)
8(b)(i) 36	B1	
8(b)(ii) 46 – 20 26	M1 A1	Allow 20 – 46
8(c) 'No' unambiguously stated or implied AND a reason, e.g. 'upper quartile is higher this year' '75% reading higher this year' 'interval was 37 (or 38) to 50 seconds last year, this year it is 46 to 50 seconds'	E1	Do not ignore incorrect values for the upper quartiles given, E0 if 'upper quartile' or '75%' stated with incorrect upper quartile readings Allow 'No' with a reason, e.g. '(last year) 38, (this year) 46' '(last year) 37.(…), (this year) 46' Do not accept, e.g. 'range greater this year' 'lower quartile is lower this year' 'median higher this year' 'customers still waiting at 50 seconds'

7. Question 1 At least 3 groups without gaps or overlaps that cover a minimum inclusive range of 1 (day) to 20 (days)	B1	Listings must all be groups, with the exception of the initial inclusion of '0', provided at least 3 further groups are given Allow, e.g. 'Less than 8 (days), 8 to 15 (days), more than 15 (days)' '0, 1 to 10 days, 11 to 15 days, 16+ days' Do not accept, e.g. '1 < days < 7, 8 < days < 14, 15 < days < 21, …' (misuse of inequalities) '0, 1 to 10 days, 11 to 21 days' (0 is not a group, so only 2 groups)
7. Question 2 At least 3 appropriate criteria in any order, e.g. 'Great, reasonable, not good', 'Scale of 0 to 10, with 10 being very happy', 'Very unhappy, happy, very happy',	B1	Accept use of smiley, blank and sad faces Allow, e.g. 'Yes, no, not sure', 'Yes, no, no answer' 'Yes, no, sometimes' Do not accept, e.g. 'Scale of 0 to 10' without stating which end of the scale is unhappy or happy, 'Yes, no, own answer', as 'own answer' is not a group