1	Use of 2 hrs 42 mins = 2.7 hrs **or** 162 mins		4	B1	
	e.g. 90×2.7 (= 243) **or** e.g. $\frac{90}{60} \times 162 (= 243)$ **or** e.g. $\frac{S}{90} = \frac{2.7}{3}$			M1	for use of $D = S \times T$ (accept use of their time e.g. 90×2.42) **or** for setting up an equation using proportion
	e.g. "243" ÷ 3 **or** $(S =) 90 \times \frac{2.7}{3}$			M1	(dep on M1) for their $D \div 3$ **or** for solving their equation
		81		A1	
					Total 4 marks

2	100 ÷ 28 440 (= 0.0035…) **or** 28 440 ÷ (60 × 60) (= 7.9)		3	M1	
	'0.0035...' × 60 × 60 **or** 100 ÷ '7.9'			M1	
		13		A1	for 12.65 – 13
					Total 3 marks

3	3 hours 36 mins = 216 (mins) or 3.6 (hours) or $3\frac{36}{60}$ oe (hours)		3	M1	
	2470 ÷ 3.6 or 2470 ÷ $3\frac{36}{60}$ or 2470 ÷ 216 × 60			M1	Allow 2470 ÷ 3.36 (=735 or better)
		686		A1	Accept 686.1 or better
					Total 3 marks

4	For [8 hours 12 minutes =] 8.2 [hours] **or** $8\frac{12}{60}$ oe **or** $\frac{41}{5}$ oe **or** 8 × 60 + 12 (= 492) [minutes]		3	B1	For correctly writing the time as a time in hours **or** minutes **or** for a correct calculation to do this
	[Average speed =] $\frac{5658}{8.2}$ oe eg $\frac{5658}{"492"} \times 60$ oe			M1	For use of speed = distance ÷ time (use of their time in hours – if used minutes, then must multiply by 60) (allow 5658 ÷ 8.12 (= 696.79…) for this mark if B0 awarded (allow 696 – 697))
	Working not required, so correct answer scores full marks (unless from obvious incorrect working)	690		A1	
					Total 3 marks

5	3.4 or $\frac{17}{5}$ or $3\frac{2}{5}$ or $3\frac{24}{60}$ or 204 oe		3	B1	
	433.5 ÷ 3.4 or 433.5 ÷ $\frac{17}{5}$ or 433.5 ÷ $3\frac{2}{5}$ or $\frac{433.5}{'204'} \times 60$ oe			M1	for use of speed = distance ÷ time Allow 433.5 ÷ 3.24 (= 133.796…) for this mark only
		127.5		A1	oe allow 128
					Total 3 marks

6	6 hrs 39 mins = 6.65 (hrs) or $6\frac{39}{60}$ or $6\frac{13}{20}$ or $\frac{133}{20}$ or 399 (mins)		3	B1	
	Average speed = $\frac{429}{6.65}$ oe eg $\frac{429}{399} \times 60$			M1	Use of $S = D \div T$ (use of their time in hours) [allow 429 ÷ 6.39 if B0 awarded]
		64.5		A1	Awrt 64.5
					Total 3 marks

7	77.5 or 82.5 **or** 2.65 **or** 2.75 or 32.5 **or** 33.5 **or** 0.95 **or** 1.05 or 77500 or 82500 or 159 or 165 or 32500 or 33500 or 57 or 63		4	B1	For a *UB* or *LB* for one of the distances or times in hours or in minutes
	eg 82.5 ÷ 2.65 (= 31.13...) or 82500 ÷ 159 (= 518.867...) or km/min or m/h			M1	for a method to find the upper bound of Kaidan's average speed eg $UB_K \div LB_K$ where $80 < UB_K \leq 82.5$ and $2.65 \leq LB_K < 2.7$ or use of m/min to find upper bound for Kaidan's average speed eg $UB_K \div LB_K$ where $80000 < UB_K \leq 82500$ and $159 \leq LB_K < 162$ can use km/min or m/h
	eg 32.5 ÷ 1.05 (= 30.95...) or 32500 ÷ 63 (= 515.873……) or km/min or m/h			M1	indep for a method to find the lower bound of Sonja's average speed eg $LB_S \div UB_S$ where $32.5 \leq LB_S < 33$ and $1 < UB_S \leq 1.05$ or use of m/min to find lower bound for Sonja's average speed $LB_S \div UB_S$ where $32500 \leq LB_S < 33000$ and $60 < UB_S \leq 63$ can use km/min or m/h
	UB K = 31132…..m/h *LB S* = 30952……m/h *UB K* = 0.51886….km/min *LB S* = 0.51587…km/min	Shown		A1	shown with **accurate figures** in the **same units –** sufficient figures for comparison (can be truncated) but must be from correct working and *UB* for Kaiden and *LB* for Sonja selected eg *UB* Kaidan = 31.13... (km/h) and *LB* Sonja = 30.95...(km/h) or *UB* Kaidan = 518.867...(m/min) and *LB* Sonja = 515.873...(m/min) (dep on correct method)
					Total 4 marks

8	For sight of 5 hrs 24 mins = 5.4 (hrs) or $5\frac{24}{60}\left(=5\frac{2}{5}\right)$ oe or 324 (mins) or 19440 (secs)		3	B1	
	3980 ÷ 5.4 or $\frac{3980}{324}\times 60$ oe			M1	For distance ÷ time that should give the correct speed in km/h. (SC allow 3980 ÷ 5.24 (= 759.5…or 760) for this mark unless mark has been awarded for 324 minutes or 5.4 hours oe)
		737		A1	awrt 737 (if no working shown, 738 gets SCB2)
					Total 3 marks

9	220 ÷ 80 (= 2.75 or $\frac{11}{4}$) oe			M1 for a method to find the time from B to C
	$72\times\frac{50}{60}$ (= 60) oe			M1 for a method to find the distance from C to D Allow 0.83(333…) to 2 dp truncated or rounded
	$\frac{245+220+"60"}{2.5+"2.75"+\frac{50}{60}}\left(=\frac{525}{73\frac{1}{12}}\right)$ oe			M1 for a complete method to find the average speed for entire journey 0.83(333…) to 2 dp truncated or rounded 6.0(8333…) to 2 sf truncated or rounded
		86.3		A1 for 86.3 – 86.4
				Total 4 marks

10	90 × 1000 (=90 000) or $\frac{90}{60\times 60}$ (= 0.025 or $\frac{1}{40}$) **or** $\frac{1000}{60\times 60}\left(=\frac{5}{18}=0.277...\right)$ **or** sight of 1500		3	M1	For one of ×1000 (eg sight of 90 000) or (÷60 ÷ 60) or ÷3600 oe ie correct conversion of distance units or of time units	M2 for 90 ÷ 3.6 **or** $90\times\frac{5}{18}$
	$\frac{90\times 1000}{60\times 60}$ oe eg$(1.5\times 1000)\div 60$			M1	For a fully correct method with correct use of brackets eg 90 000 ÷ 60 × 60 is M1 only if not recovered	
	Working required	25		A1	dep on M1	
					Total 3 marks	

11	3.3 or $\frac{33}{10}$ or $3\frac{3}{10}$ or $3\frac{18}{60}$ oe or 180 + 18 or 198 oe		3	B1 for working out the time in hours or minutes
	$515 \div 3.3$ or $515 \div \frac{33}{10}$ or $515 \div 3\frac{3}{10}$ or $\frac{515}{"198"} \times 60$ oe			M1 Units must be consistent
	Correct answer scores full marks (unless from obvious incorrect working)	156		A1 allow 156 – 156.1 SCM1 for 515 ÷ 3.18 (= 161.9… or 162)
				Total 3 marks