

1		conclusion (supported)	P1	$30 \div 70 (=0.428)$	$26 \div 60 (=0.4333\dots)$	$30 \div 26 (=1.153\dots)$
			P1	$60 \times "0.428\dots"$	$70 \times "0.4333\dots"$	$60 \times "1.153\dots"$
			C1	for conclusion linked to 25.7 mins, 30.3 miles or 69.2 mph		

2	(a)	57.1	P1	for a process to find time from Liverpool to Manchester, eg. $56 \div 70 (= 0.8 \text{ (hrs) or } 48 \text{ (mins)})$
			P1	for a process to find total distance, eg. $56 + 61 (= 117)$ or the total time, eg. $"48" + 75 (= 123)$ or $"0.8" + \frac{75}{60} (= 2.05)$ with consistent units of time
	(b)	explanation	P1	(dep P2) for a correct process to find average speed with consistent units of time, eg. $"117" \div "2.05"$ or $"117" \div "123"$
			A1	for answer in the range 57 to 57.1
			C1	for explaining that the time taken for the two parts of the journey must be the same or the distance from Leeds to York is $\frac{3}{4}$ of the distance from Barnsley to Leeds

3	(a)	No (supported)	P1	for 265 or 275 or 274.999... or 107.5 or 112.5 or 112.4999...
			P1	process to find $\frac{d}{t}$ where $270 < d \leq 275$ and $107.5 \leq t < 110$ oe
	(b)	Statement	P1	for process to work in consistent units of time eg $\frac{d}{t} \times 60$ or $t \div 60$ where $265 \leq d \leq 275$ and $107.5 \leq t < 110$ oe or $160 \div 60 (= 2.666\dots)$
			C1	Conclusion supported with correct figure(s) given eg No and 153(.488..) or No and 2.66 to 2.7 and 2.5(581..) from correct working
			C1	e.g. Less distance in the same time so (max) speed would drop

4		22.5	P1	for process to find James' speed eg $50 \div 2.5 (=20)$ or $50 \div 150 (= \frac{1}{3})$
			P1	for process to find James' time for 15 km eg $15 \div "20" (=0.75)$ or $15 \div \frac{1}{3} (=45)$
			P1	for process to find Peter's time for 15 km eg $"45" - 5 (=40)$
			P1	for process to find Peter's speed eg $15 \div "40"$ or $15 \div \frac{40}{60}$
			A1	oe

5	(a)	16 to 20	P1	for using time = $\frac{\text{distance}}{\text{speed}}$, eg $\frac{1}{200}$ or $\frac{1}{213}$ or for 1 hour = $60 \times 60 (= 3600)$ seconds	Calculation could be done in stages.
			P1	complete process, eg $\frac{1}{200} \times 60 \times 60$ oe or $\frac{1}{213} \times 60 \times 60$ oe	
	(b)	decision with reason	A1	for answer in range 16 to 20	
			C1	(dep on correct use of time = $\frac{\text{distance}}{\text{speed}}$) for reason related to their response to part(a), eg overestimate as speed rounded down	

6	(a)	130	P1	for process to divide eg $(3.9 \times 10^7) \div (3 \times 10^5)$	Condone missing brackets Accept 1.3×10^2
			A1	cao	
	(b)	Explanation	C1	Explanation referring to the time Acceptable examples The time will be more It will take longer The answer will be bigger Not acceptable examples The answer will be wrong The answer will be different	

7	(i)	Distance in the range 20 to 23	P1	for a process to draw a bearing of 070° , eg. a line drawn 70° from the North line at P	Accept a line of any length as long as the intention is clear. Award P3 for Q shown in the correct place on the diagram. 4.5 scores 2 marks provided there is a link to $12 \times 1.5 (= 18)$ Award no marks if no supportive processes Award no marks if no supportive processes Award A0A0 if Q is not in the correct place
	(ii)	Bearing in the range 317 to 330	P1	for a process to work out the distance PQ, eg. $12 \times 1.5 (= 18)$	
			P1	(dep previous P1) for the process to use the given scale, eg. " $18'' \div 4 (= 4.5 \text{ cm})$ "	
			A1	(dep P3) for distance in the range 20 to 23	
			A1	(dep P3) for bearing in the range 317 to 330	

8	(a)	21.6	M1	for a method using distance = speed \times time, eg. $72 \times \frac{18}{60}$ or 7.2 km in 6 minutes, so 7.2×3 oe partitioning method	Accept 72×18 Accept methods to convert both speeds to km/s or m/h
			A1	for 21.6 oe	
	(b)	No (supported)	M1	for a method to convert 20 m/s to km/h or 72 km/h to m/s, eg. $20 \times \frac{3600}{1000} (= 72)$ or $72 \times \frac{1000}{3600} (= 20)$	
			C1	for No since $72 \text{ km/h} = 20 \text{ m/s}$ oe	

9		50	B1	for finding the time difference, eg. 1hr 18 mins or 78 mins oe	Allow 1.18 for this mark 118 scores B0 For a conversion of time or speed [time] is what the candidate clearly indicates as time difference
			P1	for correct process to convert minutes to hours, eg. $18 \div 60 (=0.3)$ or $78 \div 60 (=1.3)$ or for a correct process to convert speed in miles per minute to mph eg. " $0.833... \times 60$ "	
			P1	for using speed = distance \div time eg. $65 \div [\text{time}]$ or $65 \div 78 (=0.833...)$	
			A1	cao SCB2 for 83(.333...) seen as the answer	