

Paper: 1MA1/1H				
Question	Working	Answer	Mark	Notes
9		22.5	P1	for process to find James' speed eg $50 \div 2.5 (=20)$ or $50 \div 150 (= \frac{1}{3})$
Q1			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

Paper: 1MA1/3H				
Question	Working	Answer	Mark	Notes
3		648	M2	a complete method, eg $12.5 \times 1000 \div 19.3$
Q2			[M1	for using volume = mass/density, eg $12500 \div 19.3$ (condone inconsistent units or incorrect conversions) may be implied by digits 647... or 648...]!
			A1	for answer in range 647 to 648

Paper: 1MA1/2H				
Question	Working	Answer	Mark	Notes
4 (a)		57.1	P1	for a process to find time from Liverpool to Manchester, eg. $56 \div 70 (= 0.8 \text{ (hrs) or } 48 \text{ (mins)})$
Q3			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
			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
(b)		explanation	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

Paper 1MA1: 3H				
Question	Working	Answer	Mark	Notes
6		1.01	P1	fruit syrup $15 \times 1.4 (= 21)$ or water $280 \times 0.99 (= 277.2)$ or apple juice $25 \times 1.05 (= 26.25)$
Q4			P1	(dep P1) for complete process to find the total mass e.g. “277.2” + “26.25” + “21” (= 324.45) or a weighted density eg $15 \times 1.4 \div 320 (= 0.065625)$ or $280 \times 0.99 \div 320 (= 0.86625)$ or $25 \times 1.05 \div 320 (= 0.08203125)$
			P1	(dep P2) for complete process to find the density eg “324.45” $\div 320 (=1.01..)$ or “0.065625” + “0.86625” + “0.08203125” (= 1.0139..)
			A1	1.01 to 1.014

Paper 1MA1: 3H				
Question	Working	Answer	Mark	Notes
17 (a)		No (supported)	P1 P1 P1	for 265 or 275 or 274.999... or 107.5 or 112.5 or 112.4999... process to find $\frac{d}{t}$ where $270 < d \leq 275$ and $107.5 \leq t < 110$ oe 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 $160 \div 60 (= 2.666..)$
Q5			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
(b)		Statement	C1	e.g. Less distance in the same time so (max) speed would drop

Paper: 1MA1/2H				
Question	Answer	Mark	Mark scheme	Additional guidance
6	No (supported)	P1	For a process to calculate the initial or new pressure, eg $(70 + 10) \div (20 + 10)$ (=2.6 to 2.7) or $80 \div 30$ (=2.6 to 2.7) or $70 \div 20$ (=3.5)	Accept any value in the range 2.6 to 2.7 if unsupported by working
Q6		P1	For a complete process to make a comparison eg $0.8 \times "3.5"$ (=2.8) OR $\frac{("3.5" - "2.6")}{"3.5"} \times 100$ (=22 to 26) OR $"3.5" \times 0.2$ (=0.7) and $80 \div 30$ (=2.6 to 2.7) OR $\frac{"2.6"}{"3.5"} (\times 100)$ (=0.74 to 0.78 or 74 to 78)	
		A1	for a correct conclusion supported by accurate figures eg 2.8 and 2.6(6...) OR decrease is 24% (or 22% to 26%) OR 0.7 and 2.6 to 2.7 and 3.5 OR 0.7 and 0.9 OR 0.76 (or 0.74 to 0.78) OR 76% (or 74% to 78%)	

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Question	Answer	Mark	Mark scheme	Additional guidance
13	1.01	P1	for $1.09 \times 60 (= 65.4 \text{ or } \frac{327}{5})$ or $0.97 \times 128 (= 124.16 \text{ or } \frac{3104}{25})$	<p>Note that the volumes may be converted to ml, eg $1.09 \times 60000 (= 65400)$</p> <p>Candidates working in ml must use 188,000</p> <p>If an answer within the range is seen in working but then rounded incorrectly award full marks. Accept 1 for 1.00 Note that the correct value is 1.008.....</p>
Q7		P1	for $1.09 \times 60 (= 65.4 \text{ or } \frac{327}{5})$ and $0.97 \times 128 (= 124.16 \text{ or } \frac{3104}{25})$ or “65.4” + “124.16” (= $189.56 \text{ or } \frac{4739}{25}$)	
		P1	for a complete process to find the density of antifreeze eg (“65.4” + “124.16”) $\div 188$ or $189.56 \div 188$ or $\frac{4739}{25} \div 188$	
		A1	for answer in the range 1.00 to 1.01	

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Question	Answer	Mark	Mark scheme	Additional guidance
13	196	P1	for vol A = $1400 \div 70$ (=20) or for mass B = 280×30 (=8400)	
Q8		P1	for density $C = \frac{1400 + "8400"}{"20" + 30}$ (= $\frac{9800}{50}$) or answer with digits 196	
		A1	cao	An answer of 350 from $70 + 280$ gets no marks

Paper: 1MA1/3H				
Question	Answer	Mark	Mark scheme	Additional guidance
2	2 hours 45 minutes	P1	for $30 \div 24 (= 1.25)$ or $12 \div 8 (= 1.5)$	May be written in hours and/or minutes
Q9		P1	for finding the sum of their two times eg “1.25” + “1.5” (= 2.75) or 165 (minutes)	or 3 h 15 min or 2 h 75 min
		A1	cao	

Paper: 1MA1/2H				
Question	Answer	Mark	Mark scheme	Additional guidance
7	1.6	P1	for $1.8 \times 80 (= 144)$ or $1.2 \times 40 (= 48)$ or for 192 or for $80 : 40 = 2 : 1$	
Q10		P1	for (“144” + “48”) \div (80 + 40) or $192 \div 120$ or for $(1.8 \times 2 + 1.2) \div 3$ or $4.8 \div 3$	
		A1	oe	

Paper: 1MA1/3H				
Question	Answer	Mark	Mark scheme	Additional guidance
5	(a)	2 mins 48 secs	P1 for an appropriate first step eg $700 \div 475 (=1.47..)$ or $475 \div [\text{time}] (= 4.16.. \text{ m/s})$ or $[\text{time}] \div 475 (= 0.24 \text{ s/m})$	[time] what candidate indicates as time of first race Units are not needed and can be ignored if given Allow calculation in stages and appropriate rounding.
			P1 for a complete method to find the required time eg $700 \div 475 \times [\text{time}] (=168)$ or $700 \div (475 \div [\text{time}]) (=168)$ or $[\text{time}] \div 475 \times 700 (=168)$	
Q11	(b)	Statement	A1 cao C1 eg takes less time Acceptable examples Quicker time Faster time Reduces my answer to part (a) Not acceptable examples It is an underestimate The amount of time could/may increase Laura goes faster	

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Question	Answer	Mark	Mark scheme	Additional guidance
9 (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
Q12	No (supported)	A1	for 21.6 oe	
		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)	Accept methods to convert both speeds to km/s or m/h
		C1	for No since 72 km/h = 20 m/s oe	

Paper: 1MA1/3H				
Question	Answer	Mark	Mark scheme	Additional guidance
Q13	50	B1	for finding the time difference, eg, 1hr 18 mins or 78 mins oe	Allow 1.18 for this mark 118 scores B0
		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 " $0.833..$ " $\times 60$	For a conversion of time or speed
		P1	for using speed = distance \div time eg, $65 \div [\text{time}]$ or $65 \div 78 (=0.833..)$	[time] is what the candidate clearly indicates as time difference
		A1	cao SCB2 for $83(.333\dots)$ seen as the answer	

Paper: 1MA1/3H				
Question	Answer	Mark	Mark scheme	Additional guidance
13	739	P1	process to find the volume of C, eg $\pi \times 3^2 \times 25$ (= 706.8583471 or 225π)	For use of 3.14 Volume of C is 706.5
Q14		P1	process to find the volume of A or the volume of B, eg “706.8...” $\times \frac{2}{2+13}$ (= 94.24777961 or 30π) or “706.8...” $\times \frac{13}{2+13}$ (= 612.6105675 or 195π) or process to work with density and ratio, eg $(2 \times 1.21 + 13 \times 1.02)$ (= 15.68)	Volume of A is 94.2 Volume of B is 612.3
		P1	process to find the mass of C, eg “ 30π ” $\times 1.21$ (= 114.0398133) + “ 195π ” $\times 1.02$ (= 624.8627788) or “ 225π ” \times “15.68” $\div (2+13)$	Mass of A is 113.982 Mass of B is 624.546
		A1	for an answer in the range 738.5 to 739	Do not award accuracy mark if the figure is from obvious incorrect working

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Question	Answer	Mark	Mark scheme	Additional guidance
7	1250	P1	for process to use area of base in the formula, eg $\frac{10000}{2 \times 4}$	
Q15		A1	cao	

Paper: 1MA1/3H				
Question	Answer	Mark	Mark scheme	Additional guidance
Q16	14.1	P1	for a process to find the volume of the top eg $92.8 \div 2.9 (= 32)$	Values can be truncated or rounded For this mark, [total volume] does not have to come from a correct process but is the value that the student believes is the total volume of the pyramid.
		P1	for finding total mass of P eg $92.8 + 972.8 (= 1065.6)$	
		P1	for finding total volume of P eg $\frac{"1065.6"}{4.7} (= 226.7234)$	
		P1	(dep P2) for $\frac{"32"}{[\text{total volume}]} \times 100$	
		A1	for answer in the range 14.1 to 14.2	

Paper: 1MA1/1H				
Question	Answer	Mark	Mark scheme	Additional guidance
7	3 : 2	P1	for a process to find either volume eg $3^3 (= 27)$ or $4^3 (= 64)$	
Q17		P1	for showing density A = $81 \div "27" (= 3)$ or density B = $128 \div "64" (= 2)$	
		A1	for 3 : 2 oe	Ignore units quoted

Paper: 1MA1/2H				
Question	Answer	Mark	Mark scheme	Additional guidance
9	0.8	P1	for process to find the area, eg $187.5 = \frac{180}{A}$ or $180 \div 187.5 (= 0.96)$ or $\frac{180}{1.2x} = 187.5$ or $1.2x = \frac{180}{187.5}$	Ignore units for P marks only
Q18		P1	for complete process to find width, eg “0.96” $\div 1.2$ or $180 \div 225$	
		A1	cao	

Paper: 1MA1/3H				
Question	Answer	Mark	Mark scheme	Additional guidance
6	10	P1	for a process to use distance = speed \times time for either of the parts of Jessica's journey, eg. $6 \times \frac{15}{60}$ (= 1.5) or $9 \times \frac{40}{60}$ (= 6) or 6×15 (= 90) or 9×40 (= 360)	Must be consistent units at this stage.
Q19		P1	for a process to add the 2 distances for Jessica, eg $6 \times \frac{15}{60} + 9 \times \frac{40}{60}$ (= 7.5) or $6 \times 15 + 9 \times 40$ (= 450)	
		P1	for complete process to find Amy's average speed, eg. "7.5" \div "0.75" oe or "450" \div 45	
		A1	cao	