Mark Scheme

Q1.

Question	Answer	Mark	Mark scheme	Additional guidance
	11 – 19	P1	for drawing a tangent to the curve at time = 5	
		P1	for process to find the gradient, eg 70 ÷ 5	Using their drawn tangent, eg change in y ÷ change in x
		A1	(dep on 1st P1) for answer in the range 11 - 19 m/s	Must come from gradient of a tangent.

(Q14 1MA1/2H, June 2018)

Q2.

Question	Answer	Mark	Mark scheme	Additional guidance
	0.7 to 1.1	M1	for tangent to the curve drawn at $t = 12$	
		M1	for method to find the gradient of their tangent, eg 28 ÷ 30	Working may be seen on the diagram
		A1	for answer in the range 0.7 to 1.1 dependent upon tangent drawn	Ignore negative signs

(Q15 1MA1/3H, Nov 2021)

Q3.

Question	Answer	Mark	Mark scheme	Additional guidance
(a)	1.5	M1	for method to find the gradient of the line, eg $\frac{12}{8}$	Must see use of scales.
		A1	for 1.5 oe	
(b)	Explanation	C1	Explanation relating to rate of change of volume with time, eg rate at which the container fills or change in number of litres per second or number of litres added per second	Ignore any quantities given. Award the mark for an explanation involving rate.
(c)	Explanation	C1	Explanation relating to volume (amount) of liquid in the container at the start eg number of litres in the container when $t = 0$, amount of liquid in the container to start with	

(Q12 1MA1/3H, June 2018)

Q4.

Question	Answer	Mark	Mark scheme	Additional guidance
	260	P1	conversion to common units of capacity eg 2.2 × 4.54 (= 9.988) or 8 ÷ 4.54 (= 1.76...) **OR** for Company A 2400 ÷ 4.54 (= 528.63...) **OR** 2400 ÷ 8 (= 300) **OR** a rate per minute 8 ÷ [time for Company A] (= 4.8…) oe	Results of calculations may be truncated or rounded. [time for Company A] could be 1 min 40 sec or 1.66… or 1.6 or 1.40 etc as long as it is clear it relates to 1 min 40 sec
		P1	for a complete process to find the time for company A or company B in minutes. eg in litres Company A 2400 ÷ "4.8…" (= 500) or "300" × [1 min 40 sec] (= 500) **or** Company B 2400 ÷ "9.988" (= 240.28...) **OR** eg in gallons Company A "528.63.." ÷ ("1.76..." ÷ [1 min 40 sec]) (= 500) **or** Company B "528.63…" ÷ 2.2 (= 240.28…)	
		P1	for complete processes to find the times for both company A and company B in minutes. Company A eg in litres 2400 ÷ "4.8…" (= 500) or "300" × [1 min 40 sec](= 500) **or** in gallons "528.63.." ÷ ("1.76. .." ÷ [1 min 40 sec]) (= 500) **AND** Company B eg in litres 2400 ÷ "9.988" (= 240.28...) or in gallons "528.63…" ÷ 2.2 (= 240.28…)	
		A1	for an answer in the range 259 to 260	If the answer is given within the range but then rounded incorrectly award full marks.

(**Q04 1MA1/3H, Nov 2021**)

Q5.

Question	Answer	Mark	Mark scheme	Additional guidance
	196	P1	for vol A = 1400 ÷ 70 (=20) **or** for mass B = 280 × 30 (=8400)	
		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

(**Q13 1MA1/1H, Nov 2020**)