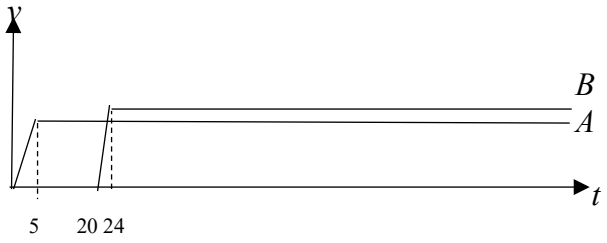
8a			
	Correct shape for sketch for A, starting at the origin.	B1	B0 if solid vertical line at the end of either.
	Correct shape for sketch for B, must be correct relative to A, crossing it and ending at same time. Must be done on the same axes.	B1	Tram B starts later and acceleration greater.
	5, 20, 24 shown	DB1	Dependent on previous two marks
		(3)	
8b	$t = 20 + \frac{10}{3}\left(= \frac{70}{3}\right)$	B1	
	Distance travelled for either vehicle	M1	
	$\frac{1}{2} \times \frac{10}{3} \times 10$ **OR** $\frac{1}{2} \times 5 \times 10 + \frac{55}{3} \times 10$; $\frac{1}{2}\left(\frac{70}{3} + \frac{70}{3} - 5\right) \times 10$	A1	
	Find second distance and subtract	M1	
	$d = \frac{625}{3} - \frac{50}{3} = \frac{575}{3} = 191\frac{2}{3}$	A1	Accept 192 or better.
		(5)	
8c	Equate distances from O	M1	Find both distances at time t seconds and equate, using correct structure – see examples.
	$\left(\frac{t + t - 5}{2}\right) \times 10 = \left(\frac{t - 20 + t - 24}{2}\right) \times 12$ **OR** $\left(\frac{1}{2} \times 5 \times 10\right) + 10(t - 5) = \left(\frac{1}{2} \times 4 \times 12\right) + 12(t - 24)$	A2	Correct unsimplified equation, -1 each error (up to a maximum of 2)
	$t = 119.5$	M1	Solve for t
	Distance $= 5 \times \left(6 \times 44 - 30\right) = 1170\,(\text{m})$	A1	Accept 1200 or better
		(5)	
		[13]	

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