

Question number	Scheme	Marks
5(a)	For car: $\left(\frac{T+T-30}{2}\right)V$	M1
	$V(T-15)$ (metres) * Allow $(T-15)V$	A1*
		(2)
5(b)		B1 shape B1 Horiz labels (10,50,60)
		(2)
5(c)	$\frac{\text{speed}}{40} = \frac{V}{30}$	M1
	$(\text{speed}) = \frac{4V}{3} (\text{m s}^{-1})^*$	A1*
		(2)
5(d)	<p>For motorbike</p> <p>OR: $\frac{1}{2}\left(\frac{4V}{3} \times 40\right) + \left(\frac{4V}{3} \times 10\right) + \frac{1}{2}\left(\frac{4V}{3} + V\right)(T-60)$</p> <p>OR: $\frac{1}{2}\left(\frac{4V}{3} \times 40\right) + \left(\frac{4V}{3} \times 10\right) + \frac{1}{2}\left(\frac{4V}{3} - V\right)(T-60) + V(T-60)$</p> <p>OR: $\frac{1}{2} \times \frac{4V}{3} \times (10+50) + \frac{1}{2}\left(\frac{4V}{3} + V\right)(T-60)$</p> <p>(Simplified: $\frac{7VT}{6} - 30V$)</p>	M1 A1 A1
	Equate their motorbike distance to $V(T-15)$ to give an equation in T only	M1
	$T = 90$	A1
	ALT: Find area of upper trapezium and parallelogram (differences in areas)	M1
	$\frac{1}{2}\left(\frac{V}{3}\right)(T-40+10)$	A1
	and $10V$	A1
	Equate to give an equation in T only (V cancels)	M1
	$T = 90$	A1
		(5)
		(11)