

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