QUESTION NUMBER	SCHEME	MARKS
3(a)	A to B : $$s = \left(\frac{u+v}{2}\right)t \quad : \qquad 400 = \left(\frac{u+28}{2}\right)20$$ Other possible equations: $$28 = u + 20a$$ $$400 = 20u + \frac{1}{2}a \times 20^2$$ $$28^2 = u^2 + 2 \times 400a$$ $$400 = (28 \times 20) - \frac{1}{2}a \times 20^2$$	M1
	$u = 12$ *	A1* cso
		(2)
3(b)	A to B : Any of the above equations with $u = 12$ e.g. $v = u + at \qquad 28 = 12 + 20a$ (leads to $a = 0.8$)	M1 A1
	A to midpoint: $\quad 200 = 12t + \frac{1}{2}0.8t^2$ **OR:** find v and use it to find t e.g. $v^2 = 12^2 + (2 \times 0.8 \times 200) \Rightarrow v = \sqrt{464}$ and then one of : $$\sqrt{464} = 12 + 0.8t$$ $$200 = \left(\frac{12 + \sqrt{464}}{2}\right)t$$ $$200 = \sqrt{464}t - \frac{1}{2} \times 0.8t^2$$	M1 A1
	$t = 12$ (s) or better (11.9258..), $5\sqrt{29} - 15$	A1
		(5)
3(c)	$D - 260 = 1200(0.8)$	M1A1ft
	$D = 1220$ (N)	A1
		(3)
		(10)
	Notes for question 3	
(a) **M1** **A1***	Complete method to find the value of u. (they may use two equations, eliminate a and solve for u) Correctly reaches the given answer. **N.B**. If they use 2 equations, we need to see a eliminated and u found correctly for this A mark. **N.B.** No marks if they use $u = 12$ in (b) to find a and then use it in (a) to show that $u = 12$.	