

Question	Scheme		Marks	AOs
1(a)			B1 (shape)	1.1b
			B1 (Figs.)	1.1b
			(2)	
(b)	$a = 0.5$		B1	3.1b
			(1)	
(c)	Use the area under the graph oe to find the distance travelled in the first two phases of the motion		M1	2.1
	$(20 \times 12) + \frac{(20+16)}{2} \times 8 \quad (=384)$		A1	1.1b
	$AB = 384 + 285 = 669 \text{ (m)}$		A1ft	1.1b
			(3)	
(d)	$285 = 16t + \frac{1}{2} \times 0.4t^2$		M1	2.1
	$t = 15$		A1	1.1b
	Total = $15 + 20 = 35 \text{ (s)}$		A1ft	1.1b
			(3)	
(e)	There wouldn't be an instantaneous change in the acceleration.		B1	3.5b
			(1)	

(10 marks)

Notes:		
1(a)	B1	Correct shape with no solid vertical lines
	B1	Figures, 20 and 16 on the speed axis and 12 and 20 on the time axis
1(b)	B1	cao
1(c)	M1	Clear attempt with the correct structure
	A1	Correct unsimplified expression
	A1ft	cao but if they have scored M1A0, ft on their distance
1(d)	M1	Complete method to find t
	A1	cao
	A1ft	ft on their t
1(e)	B1	oe