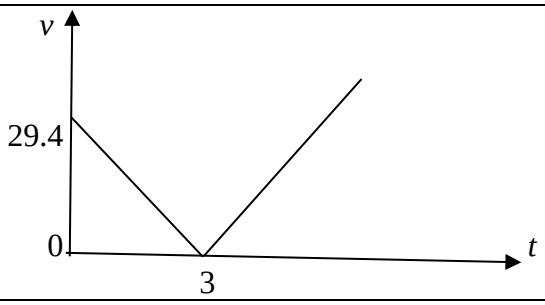
Question Number	Scheme	Marks
5(a)	$0 = 14.7^2 - 2gs$	M1A1
	22 or 22.1 (m)	A1
		(3)
5(b)	$19.6 = 29.4t + \frac{1}{2}gt^2$ **N.B.** $19.6 = 29.4t - \frac{1}{2}gt^2$ is M0A0 $-19.6 = 29.4t + \frac{1}{2}gt^2$ is M0A0 $-19.6 = 29.4t - \frac{1}{2}gt^2$ is M0A0 unless they go on to subtract 6 from the positive root	M1A1
	t = 0.61 or 0.606 (s)	A1
		(3)
5(c)		B1 shape B1 29.4 B1 3
		(3)
		(9)
	Notes for question 5	
5(a)	M1 Complete method to find distance **UP** **N.B.** They may find time UP (1.5s) **AND** use it to find distance UP **OR**: (Distance from *A* to top – Distance from '14.7' to top) = (44.1 – 33.075)	
	A1 Correct equation(s) used	
	A1 cao	
5(b)	M1 Complete method to find required time **N.B.** They may find the speed as it hits the ground ($g\sqrt{13} = 35.334...$) AND use it to find the time.	
	A1 Correct equation(s) used	
	A1 cao **N.B.** If they add to or subtract from 0.606, it's M0 for an incorrect method.	
5(c)	B1 V shape with *v* coord of end pt > 29.4 and each half roughly equally inclined to the *t*-axis. B0 if a vertical line is included at the end.	
	B1 29.4 independent	
	B1 3 independent	