9	**(a)**		Vertical motion $u_y = 100\sin 25°,\ \ v_y = 0$ $v^2 = u^2 + 2as$ $0 = (100\sin 25°)^2 - 2\times 9.8\times s$ $s = \dfrac{42.26^2}{19.6} = 91.1\,\text{m}$ (3sf)	**M1** **B1** **A1** **[3]**	**3.3** **1.1a** **3.2a**	Use of *suvat* equation(s) with $v = 0$ leading to a value for s. Allow sign errors Correct component of velocity soi cao	eg from $t = 4.31$ s
9	**(b)**		Vertical motion $u_y = 100\sin 25°,\ \ y = 0$ $s = ut + \frac{1}{2}at^2 \Rightarrow 0 = (100\sin 25°)t - 4.9t^2$ $t(100\sin 25° - 4.9t) = 0 \Rightarrow t = 0$ or 8.62... $x = (100\cos 25°)\times 8.62... = 781.678...$ Range is 782 m (3sf)	**M1** **A1** **M1** **A1** **[4]**	**3.3** **1.1a** **1.1a** **1.1b**	Use of *suvat* equation(s) with $y = 0$ and their $u_y \neq 100$ leading to a value for t. Allow sign errors Correct value or expression for t from correct working Use of horizontal motion equation with $u_x = 100\cos 25°$ **FT** their value for t	Can be BC Allow for sin/cos interchange used throughout part (b).