10	**(a)**		$s = 9(6)^2 - 1.5(6)^3 = 0$ E.g. The boomerang is at O E.g. She catches the boomerang	**M1** **E1** **[2]**	**1.1** **3.4**		
10	**(b)**		$v = 18t - \frac{9}{2}t^2$ When $v = 0$, $t = 0$ or $t = 4$ At $t = 0$, $s = 0$, so maximum displacement must be when $t = 4$ giving $s = 48\,\text{m}$	**M1** **M1** **A1** **E1** **[4]**	**1.1** **1.1** **1.1** **3.4**	Imply deduction that greatest distance is when velocity $= 0$ and solve	
10	**(c)**		$t = 5$ $v = -22.5$	**B1** **B1** **[2]**	**3.1b** **3.4**		
10	**(d)**		$a = 18 - 9t$ Acceleration $= -27\,(\text{m s}^{-2})$	**M1** **A1** **[2]**	**1.1** **1.1**		