Question	Scheme	Marks	AOs
9(a)	$t = 0,\ v = 56 \Rightarrow 56 = A + B$ **or** $t = 5,\ v = 10 \Rightarrow 10 = A + Be^{-2.5}$	M1	3.1b
	$t = 0,\ v = 56 \Rightarrow 56 = A + B$ **and** $t = 5,\ v = 10 \Rightarrow 10 = A + Be^{-2.5}$ **and** $\Rightarrow A = ...,\ B = ...$	M1	3.1a
	At least one of awrt: $A = 5.89,\ B = 50.1$	A1	1.1b
	$v = 5.89 + 50.1e^{-0.5t}$	A1	3.3
		(4)	
(b)	Minimum v is "5.89"	B1ft	3.4
	This suggests that the model is appropriate because $5.89 \approx 6$	B1	3.5a
		(2)	
		(6 marks)	
	Notes		

(a)

M1: Uses either of the given conditions with the model to obtain at least one equation in A and B

M1: Uses both of the given conditions with the model to obtain 2 equations in A and B and solves to obtain values

A1: For A = awrt 5.89 or B = awrt 50.1

A1: Correct equation

(b)

B1ft: Interprets the value of A as the final speed of the skydiver

B1: The model is appropriate as it suggests that the final speed of the skydiver is approximately $6\,\text{ms}^{-1}$