Question	Answer	Marks	Guidance
(a)	PE lost in 50 m = $(m + 300)\, g \times 50 \sin 3$	**B1**	
	$(m + 300)\, g \times 50 \sin 3 - 40\,000 = 0$	**M1**	Use of the work-energy equation.
	$m = 1230$ to 3 sf	**A1**	$m = 1228.6$
	Alternative method for question (a)		
	Resistance force $R = \frac{40\,000}{50}$ [= 800 N]	**B1**	
	$(m+300)g\sin 3 - R = 0$	**M1**	Apply Newton's second law to the system, 3 terms.
	$m = 1230$ to 3 sf	**A1**	$m = 1228.6$
		3	
(b)	$T + 300\, g \sin 3 - 200 = 0$ (Trailer) or $mg \sin 3 = T + 600$ (Car)	**M1**	Apply Newton's 2nd law either to the trailer or to the car using $a = 0$, three terms in either case.
	$T = 43$[.0] N to 3 sf	**A1**	
		2	