

Question			Answer	Marks	AOs	Guidance	
12			Normal reaction $mg \cos 15^\circ$	B1	3.1b	Correct normal reaction	Only allow $0.4mg$ if it is clear that mg is their normal reaction and not just weight
			Max friction $\mu N = 0.4mg \cos 15^\circ$	M1	1.1b	Attempt to evaluate friction FT their normal reaction.	
			Resolve down the slope	B1	1.1b	Correct component of weight seen	
			$mg \sin 15^\circ - F = ma$	M1	3.1b	($2.536m$)	
			$mg \sin 15^\circ - 0.4mg \cos 15^\circ = ma$			All terms present; allow sign errors, sin/cos interchange for weight and their F	
			giving $a = -1.25 \text{ m s}^{-2}$	A1	1.1b	Correct equation (a need not be explicitly evaluated here)	
			Using $v^2 = u^2 + 2as$	M1	3.1b	Use of <i>suvat</i> equation(s) leading to a value for s using $v = 0$	
			$0^2 = 1.2^2 + 2 \times (-1.25)s$				
			giving $s = 0.576 \text{ m}$	A1	1.1b	FT their negative a	
				[7]			