6a	Resolve perpendicular to the slope: $R = mg\cos\theta \left(= \frac{4}{5}mg \right)$ **OR** $R = W\cos\theta \left(= \frac{4}{5}W \right)$	M1	Condone sine / cosine confusion and use of α, or similar, for θ
	Use of $F = \frac{1}{4}R$	M1	R does not need to be substituted.
	Friction = $\frac{1}{4} \times mg\cos\theta$	A1	Seen or implied.
	Equation of motion	M1	Need all 3 terms. Condone sign errors and sine / cosine confusion
	$F + mg\sin\theta = ma$ **OR** $F + W\sin\theta = \frac{W}{g}a$	A1	Correct unsimplified equation. Allow with $-a$
	$\left(a = \right)\frac{4}{5}g$ *	A1*	Given answer A0 for 0.8g If using $-a$, allow $-a = \frac{4}{5}g$ but not $a = -\frac{4}{5}g$ as the final answer.
			N.B. Full marks available if m replaced with 2 throughout.
			N.B. The first 3 marks are for finding the friction and just stating that $F = \frac{1}{5}mg$, scores M0M0A0. **N.B.** Since this is a 'Show that…' question the final A1* can only be scored for a fully correct solution, including use of $\cos\theta = \frac{4}{5}$ and $\sin\theta = \frac{3}{5}$,
		(6)	
6b	Use of *suvat* to form an equation in U only	M1	e.g. $0 = U^2 - 2 \times \frac{4}{5}g \times 1.5$ **N.B.** Must use $a = \pm\frac{4}{5}g$
	Obtain $U = 4.8$ or $U = 4.85$	A1	2 sf or 3 sf only Not $\sqrt{\frac{12}{5}g}$ nor $\frac{14\sqrt{3}}{5}$
		(2)	

6c	Resolve parallel to the slope: $X + F = 2g\sin\theta$	M1	Correct terms. M0 if using R in their equation. Condone sign errors and sine / cosine confusion. **N.B.** Allow m for the mass.
	$X + \frac{1}{4}2g\cos\theta = 2g\sin\theta$	A1	Correct unsimplified equation in X and θ
	$X = \frac{4}{5}g = 7.8$ or 7.84	A1	2 sf or 3 sf only Allow $\frac{4}{5}g$ or $0.8g$
		(3)	
		(11)	