Question	Scheme	Marks	AOs
4(a)	Resolve perpendicular to the plane	M1	3.3
	$R = mg\cos\alpha$	A1	1.1b
	Equation of motion up the plane	M1	3.1a
	$-mg\sin\alpha - F = ma$ **or** $-mg\sin\alpha - F = -ma$ **or** $mg\sin\alpha + F = ma$	A1	1.1b
	$F = \frac{4}{5}R$	B1	1.2
	Deceleration = $\frac{3}{5}g + \left(\frac{4}{5}\times\frac{4}{5}g\right) = \frac{31}{25}g$ *	A1*	2.2a
		(6)	
4(b)	$0 = 2gd - 2\times\frac{31}{25}gs$	M1	3.1a
	$s = AB = \frac{25}{31}d$	A1	1.1b
		(2)	
4(c)	$F = mg\sin\alpha$	M1	3.1a
	$F = \frac{3}{5}mg$	A1	1.1b
		(2)	
			(10 marks)

Notes:

(a)	M1	Correct no. of terms, condone sin/cos confusion and sign errors
	A1	Correct equation
	M1	Correct no. of terms, condone sin/cos confusion and sign errors
	A1	Correct equation.
	B1	Seen or implied
	A1*	Given answer correctly obtained
(b)	M1	Complete method to find *AB*
	A1	Accept 0.81*d* or better
(c)	M1	Complete method to find *F*, condone sin/cos confusion
	A1	cao