

Question		Scheme	Marks	AOs
6(a)	Resolve vertically, $R = Mg$		B1	3.3
			(1)	
6(b)	Take moments about A		M1	3.4
	$S \times 2a \sin \theta = Mga \cos \theta$		A1	1.1b
	$S = \frac{1}{2} Mg \cot \theta = \frac{2}{3} Mg *$		A1*	2.2a
			(3)	
6(c)	Resolve horizontally, $X = F + S$		B1	3.3
	$F = \frac{4}{5} R$		B1	1.2
	Solve for X in terms of M and g		M1	2.1
	$X = \frac{22Mg}{15}$		A1	2.2a
			(4)	
6(d)	(i) $\frac{2}{3} Mg$		B1	2.2a
	(ii) Horizontally towards the wall		B1	2.2a
			(2)	
(10 marks)				
Notes:				
(a)	B1	cao		
(b)	M1	Correct no. of terms, condone sin/cos confusion and sign errors		
	A1	Correct equation		
	A1*	Correct given answer correctly obtained		
(c)	B1	Correct equation		
	B1	Seen or implied		
	M1	Solve for X, must be in terms of M and g <i>only</i>		
	A1	Accept $1.5Mg$ or better		
(d)(i)	B1	Accept $0.67Mg$ or better		
(d)(ii)	B1	Accept ‘horizontally to the right’		