

Question	Scheme	Marks	AOs
<b>6(a)</b>	Resolve vertically, $R = Mg$	B1	3.3
		(1)	
<b>6(b)</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)	
<b>6(c)</b>	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)	
<b>6(d)</b>	(i) $\frac{2}{3} Mg$	B1	2.2a
	(ii) Horizontally towards the wall	B1	2.2a
		(2)	
<b>(10 marks)</b>			

**Notes:**

<b>(a)</b>	B1	cao
<b>(b)</b>	M1	Correct no. of terms, condone sin/cos confusion and sign errors
	A1	Correct equation
	A1*	Correct given answer correctly obtained
<b>(c)</b>	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
<b>(d)(i)</b>	B1	Accept $0.67Mg$ or better
<b>(d)(ii)</b>	B1	Accept 'horizontally to the right'