

Question			Answer	Marks	AO	Guidance
4	(a)		Weight acts through the centre of the ruler 15cm from P	B1	1.1a	Uses uniformity of the ruler, by distance shown on diagram or 15 used in a calculation or equation
			Take moments about P $0.02g \times 15 = F \times 4$	M1	3.1b	Taking moments about any suitable point with all relevant forces and distances attempted. Must include a weight (not mass only) term. Allow one incorrect distance used. Allow 20g for weight or error in converting mass to kilograms or lengths to another unit.
			$F = \frac{0.02g \times 15}{4}$ $= \frac{3g}{40} = 0.735$	A1	1.1b	Allow 0.075g
				[3]		
4	(b)		Without F the ruler would rotate <u>clockwise</u> [about P]	E1	2.4	Must indicate the turning effect of the weight and the direction. “Clockwise” implies rotation.
				[1]		