6a	<table><tr><td></td><td>rectangle</td><td>triangle</td><td>lamina</td></tr><tr><td>area</td><td>$8ka^2$</td><td>$3ka^2$</td><td>$5ka^2$</td></tr><tr><td>From AD</td><td>$4a$</td><td>$2a$</td><td>d</td></tr></table>	B1 B1	Correct area ratio seen or implied Correct distances from AD or a parallel axis seen or implied. Condone if d not used
	Moments about AD	M1	Or a parallel axis. Need all terms. Dimensionally consistent. Condone sign error.
	$8ka^2 \times 4a - 3ka^2 \times 2a = 5ka^2 \times d$	A1	Correct unsimplified equation
	$26a = 5d \Rightarrow d = \frac{26}{5}a$ *	A1*	Obtain given answer from correct working. **Must obtain d = …**
		[5]	
6b	Moments about PS	M1	Or a parallel axis. Need all terms. Dimensionally consistent. Must be using the 3 correctly with areas, so $5ka^2, 15ka^2, 15ka^2$ is M0. Allow a slip on one value. Condone sign error.
	$5k \times \frac{26}{5}a + 2 \times 3 \times 4k \times 4a = (5k + 24k)\overline{x}$	A1 A1	Unsimplified equation with a slip on at most one value Correct unsimplified equation. Allow with common factors cancelled
	$\overline{x} = \frac{122}{29}a$	A1	Correct only
	$\overline{y} = ka$	B1	Distance from PQ seen or implied
	$\tan\theta = \frac{122}{29k}$	A1ft	Follow their $\overline{x}$. $\left(\frac{\overline{x}}{ka}\right)$
		[6]	
		(11)	