

- (iii) A moment about a pivot is defined as force \times perpendicular distance from pivot. Calculate the moment about the pivot due to the weight of the 200 g mass. [1]

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- (iv) State the Principle of Moments, and then calculate the weight of the ruler. [2]

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- (c) You are now going to use the weight of the ruler to find the weight of a reel of wire. Remove the 200g mass and replace it with the reel of wire. Pivot the ruler at the 55 cm hole and move the reel of wire until it balances.
By calling the weight of the reel of wire W , the moment of the weight of the wire will become $W \times$ perpendicular distance to pivot.

- (i) Complete the table with the ruler pivoted at each of the drilled holes. [4]

Distance from centre of ruler to pivot (cm)	Distance from pivot to wire reel (cm)			Moment due to the weight of the ruler (Ncm)	Moment due to the wire reel (Ncm)	Weight of the wire reel (N)
	1	2	Ave			
5.0					$\times W$	
10.0					$\times W$	
15.0					$\times W$	
20.0					$\times W$	
25.0					$\times W$	