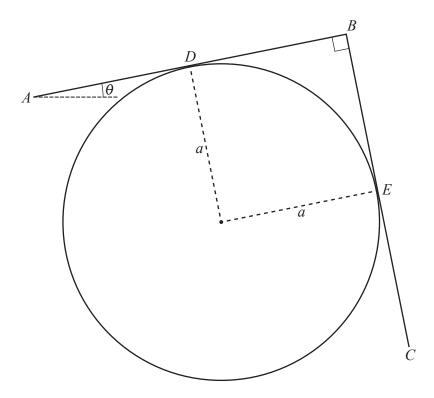
7



A uniform cylinder with a rough surface and of radius a is fixed with its axis horizontal. Two identical uniform rods AB and BC, each of weight W and length 2a, are rigidly joined at B with AB perpendicular to BC. The rods rest on the cylinder in a vertical plane perpendicular to the axis of the cylinder with AB at an angle θ to the horizontal. D and E are the midpoints of E and E respectively and also the points of contact of the rods with the cylinder (see diagram). The rods are about to slip in a clockwise direction. The coefficient of friction between each rod and the cylinder is E.

The normal reaction between AB and the cylinder is R and the normal reaction between BC and the cylinder is N.

Find the ratio $R: N$ in terms of μ .	[6

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)	Given that $\mu = \frac{1}{3}$, find the value of $\tan \theta$	
	· 3	