

STEP II, 2007, Q10 MS

- Q10** The first thing to do here is to find the position of the centre of mass of the composite figure, and this is fairly easily done by taking moments about some suitable point. Most candidates who actually attempted this question then went very badly astray, largely due to lack of a discernible approach in their jottings. In slipping-tilting situations, the standard approach is to examine separately what happens at the instant when slipping occurs *assuming* that tilting hasn't, and then to examine what happens when tilting occurs *assuming* that the slipping hasn't. This then gives two sets of conditions on P which can be compared. Remember that P can be in either direction, hence the modulus sign in the answer, which needs to be explained somewhere along the line.



NextStepMaths.com

To view mark schemes, fully worked solutions and examiner's comments, and for more details about tutoring and other services offered, go to [NextStepMaths.com](https://www.NextStepMaths.com)