1. **Tilting**

When a rigid body is on the point of tilting about a pivot, the reaction

at any other support (or tension in any other wire/string) is zero.

**Example**

A uniform beam AB, of mass 12kg and length 6m rests on two pivots at P and Q, where AP = 1m and QB = 1.5m.

A particle of *M* kg is placed at A and the beam is about to tilt about the pivot at P. Find the mass of the particle and the reaction force at P.



**Test Your Understanding – Suspended System** *(Textbook)*

A non-uniform rod $AB$, of length 10 m and weight 40 N, is suspended from a pair of light cables attached to $C$ and $D$ where $AC=3$ m and $BD=2$ m.

When a weight of 25 N is hung from $A$ the rod is on the point of rotating.

Find the distance of the centre of mass of the rod from $A$.

**Test Your Understanding** *(EdExcel M1 May 2013 Q6)*



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