

8B Modellings Assumptions

Model

Particle – Dimensions of the object are negligible.

Rod – All dimensions but one are negligible, like a pole or a beam.

Lamina – Object with area but negligible thickness, like a sheet of paper.

Uniform body – Mass is distributed evenly.

Light object – Mass of the object is small compared to other masses, like a string or a pulley.

Inextensible string – A string that does not stretch under load.

Smooth surface

Rough surface – If a surface is not smooth, it is rough.

Wire – Rigid thin length of metal.

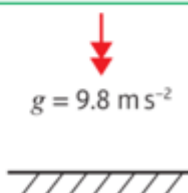
Smooth and light pulley – all pulleys you consider will be smooth and light.

Bead – Particle with a hole in it for threading on a wire or string.

Peg – A support from which a body can be suspended or rested.

Air resistance – Resistance experienced as an object moves through the air.

Gravity – Force of attraction between all objects. Acceleration due to gravity is denoted by g .



1. A mass is attached to a length of string which is fixed to the ceiling. The mass is drawn to the side with the string taut and allowed to swing.

State the effect of the following assumptions on any calculations to be made:

- a) The string is light and inextensible

- b) The mass is modelled as a particle