


Model	Modelling assumptions
Particle – Dimensions of the object are negligible.	<ul style="list-style-type: none"> mass of the object is concentrated at a single point rotational forces and air resistance can be ignored
Rod – All dimensions but one are negligible, like a pole or a beam.	<ul style="list-style-type: none"> mass is concentrated along a line no thickness rigid (does not bend or buckle)
Lamina – Object with area but negligible thickness, like a sheet of paper.	<ul style="list-style-type: none"> mass is distributed across a flat surface
Uniform body – Mass is distributed evenly.	<ul style="list-style-type: none"> mass of the object is concentrated at a single point at the geometrical centre of the body – the centre of mass
Light object – Mass of the object is small compared to other masses, like a string or a pulley.	<ul style="list-style-type: none"> treat object as having zero mass tension the same at both ends of a light string
Inextensible string – A string that does not stretch under load.	<ul style="list-style-type: none"> acceleration is the same in objects connected by a taut inextensible string
Smooth surface	<ul style="list-style-type: none"> assume that there is no friction between the surface and any object on it
Rough surface – If a surface is not smooth, it is rough.	<ul style="list-style-type: none"> objects in contact with the surface experience a frictional force if they are moving or are acted on by a force
Wire – Rigid thin length of metal.	<ul style="list-style-type: none"> treated as one-dimensional
Smooth and light pulley – all pulleys you consider will be smooth and light.	<ul style="list-style-type: none"> pulley has no mass tension is the same on either side of the pulley
Bead – Particle with a hole in it for threading on a wire or string.	<ul style="list-style-type: none"> moves freely along a wire or string tension is the same on either side of the bead
Peg – A support from which a body can be suspended or rested.	<ul style="list-style-type: none"> dimensionless and fixed can be rough or smooth as specified in question
Air resistance – Resistance experienced as an object moves through the air.	<ul style="list-style-type: none"> usually modelled as being negligible
Gravity – Force of attraction between all objects. Acceleration due to gravity is denoted by g . <div style="text-align: center;">  <p>$g = 9.8 \text{ m s}^{-2}$</p> </div>	<ul style="list-style-type: none"> assume that all objects with mass are attracted towards the Earth Earth's gravity is uniform and acts vertically downwards g is constant and is taken as 9.8 m s^{-2}, unless otherwise stated in the question