Sangam SKM College- Nadi

Year 13

Physics

Worksheet 5

Questions:

1. Determine the values of k and a if the relation $y = kx^a$ is a good representation for the data values:

x	0.5	1	2	3	4
y	5.93	8.80	19.36	42.59	93.70

   [HINT: Draw log graph]

2. A Ferries wheel that moves at constant speed of 5 m/s in a vertical circle of radius 16 m.

   a) What must the velocity be so that a 90 kg passenger will be "weightless" when at the highest point?

   b) What will be the passenger's apparent weight at the lowest point?

3. A bicycle wheel of radius 36 cm is turning at a constant speed of 10 rev/s. Calculate:

   a) its angular speed in rad/s

   b) the linear speed of a point on the rim.

   c) the angular acceleration if the angular speed is increased to 15 rev/s in 3.5 seconds.