Grade 11 Physics Workbook

St John Baptist De La Salle Catholic School, Addis Ababa

2023

3. Kinematics

1. On a 30 km bike ride, you ride the first 10 km at an average speed of 8 km/hour. What average speed must you have over the next 12km if your average speed for the whole ride is to be 18 km/hour?

2. An object starts moving at $t = 0$, and its position is given by $x = At^5 - Bt^2$, where t is in seconds and x is in meters. A is a non-zero constant.

   (a) Infer the units of A and B.

   (b) Find the velocity as a function of t.

   (c) What is the average velocity from 0 to t as a function of time?

   (d) At what time t ($t > 0$) is the velocity at t equal to the average velocity from 0 to t?

3.