1) The velocity, v mm/sec. of a point on an eccentric cam at a certain instant is given by  where x is the displacement in mm.

a) Show that when the velocity is zero the displacement lies between 1 and 2 mm.

b) Use the Newton-Raphson method to determine this displacement for the velocity to be zero. Give your answer to 4 significant figures.

2) a) By drawing a suitable graph, or graphs, show that x = 2sin²x has one solution in the region of x=0.5.

b) Find this root correct to 4 significant figures by using the Newton – Raphson method.