COMSATS Institute of Information and technology Vehari campus

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Chapter# 12



Department of Mathematics

Assignment # 03

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**ii)** Now we find time from L’ to L along the arc under constant acceleration ‘g’ to the axis of parabola I,e Y-axis(vertically downwards). Now time from V to L along the arc is same as time from V to s under gravity vertical downward.

Solution:

Total time from L’ to L=

(1)

∴ at V, initial velocity u=0 and

Distance S==a

Total time required from L’ to L is

(2)

From equation 1 and 2

(3)

**iii)** Now if ‘f’ is the acceleration of 1st particle towards focus s,

then

using equation 3

(4)

Now orbit of particle is

Differentiate with respect to ‘θ’

Again differentiate with respect to ‘θ’

Adding

∴ at vertex

(5)

Put in equation 4

Hence proved .

**References:**

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