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**COURSE CODE: MAT 102**

**COURSE TITLE: GENERAL MATHEMATICS II**

QUESTION

1. A particle moves along a curve x= 8t3, y=4t3-7t and z = t+3, where t is time. Find its

(i) velocity (ii) acceleration

2. Find the unit tangent vector to the space curve x=3t, y= t3 and z= t2 at t=1.

ANSWERS

1. (i) to find velocity

We use the formula V=$\frac{dR}{dt}$

Therefore v=(8\*3t3-1,(3\*4t3-1)-1\*7t1-1,(1\*1t1-1)+0)

V=(24t2,12t2-7,1)

(ii) to find acceleration

We use the formula A=$\frac{dV}{dt}$

Therefore A=(2\*24t2-1,(2\*12t2-1)-0,0)

A= (48t,24t,0)