EMEKA-ONWUNEME SOCHIBUNDUM MICHAEL
19/ENG06/022
MAT 102
MECHANICAL ENGINEERING
S/N: 37

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Mechanical Engr.

1.) $x = t,\ y = t^2,\ z = t^3$

$r = xi + yj + zk$

$r = ti + t^2 j + t^3 k$

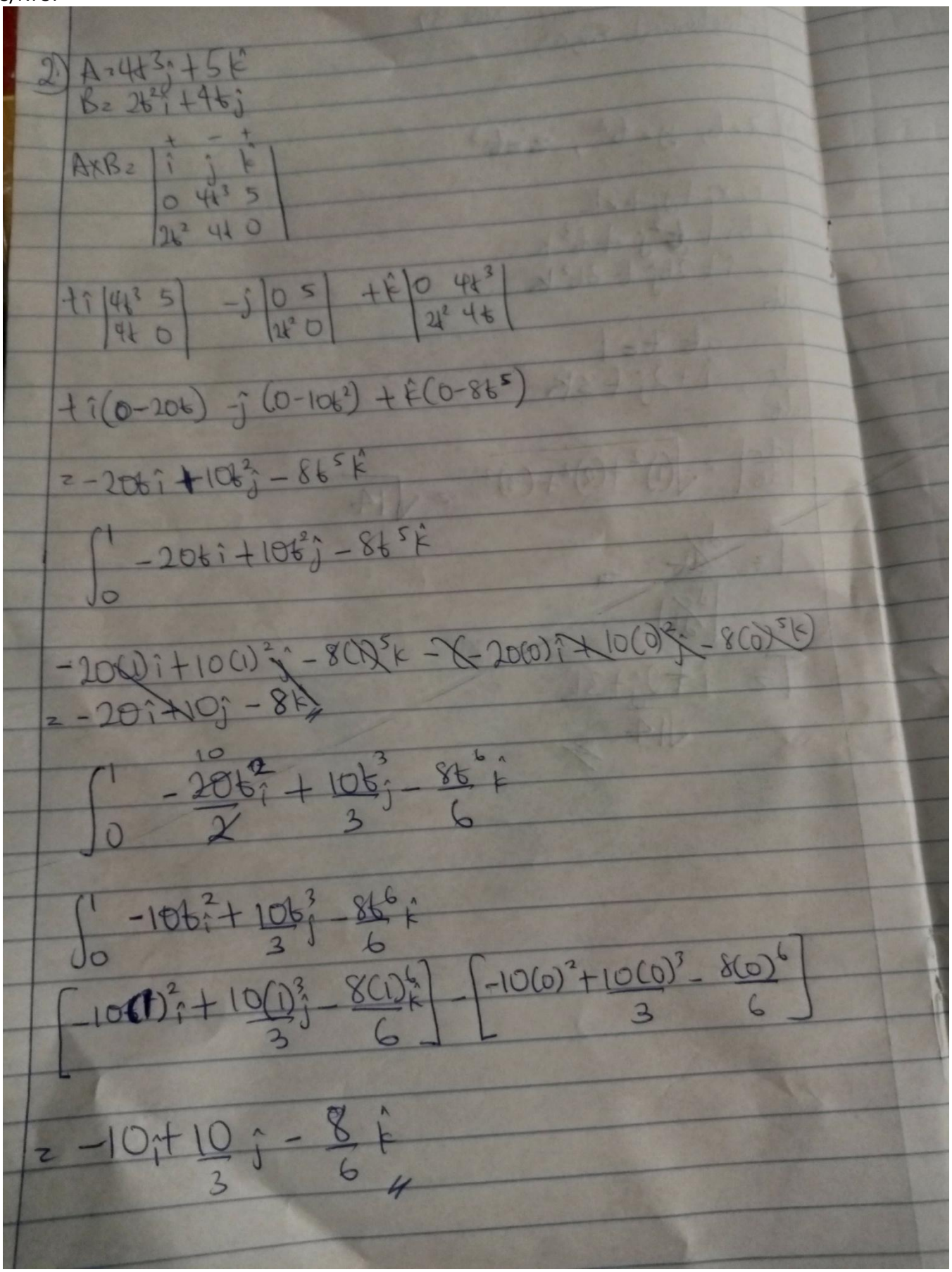
$\frac{dr}{dt} = i + 2tj + 3t^2 k$

at $t = 1$

$\frac{dr}{dt} = \hat{i} + 2\hat{j} + 3\hat{k}$

$\left|\frac{dr}{dt}\right| = \sqrt{(1)^2 + (2)^2 + (3)^2} = \sqrt{14}$

$T = \frac{dr/dt}{\left|dr/dt\right|}$

$T = \frac{\hat{i} + 2\hat{j} + 3\hat{k}}{\sqrt{14}}$

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