

OTUGBO ESCOOL V

17/06/2017

MECHANICAL ENGINEERING

ENR 282

ASSIGNMENT 3

1. If $\phi = x^2yz^3 + xy^2z$, write a MATLAB mfile program to determine ϕ at the point $(1, 3, 2)$.

Soln

Input

- i) command window
- ii) cur
- iii) clic
- iv) cste = 11
- v) gms x
- vi) gms y
- vii) gms z
- viii) $\phi = x^2y^2z^3 + x^2y^2z^2$
- ix) $\nabla \phi$ gradient ($\phi, [x, y, z]$)
- x) subs($\phi, [x, y, z], [1, 3, 2]$)

Output

- i) $\phi = x^2y^2z^3 + x^2y^2z^2$
- ii) $\nabla \phi = y^2z^3 + 2x^2yz^2$
 $x^2z^3 + 2xy^2z^2$
 $3x^2y^2z^2 + 2x^2y^2z$

iii) 81
 82
 72
 = 81i + 82j + 72k