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17/ENG04/057

ELECTRICAL ELECTRONICS ENGINEERING

ENGINEERING MATH ASSIGNMENT 3 (ENG282)

**Instruction**: The codes and the output obtained should be written clearly on the answer

sheet.

**Question 1**

If , 2 3 2 2 φ = x yz + xy z write a MATLAB mfile program to determine grad ϕ at the point P(1, 3, 2)

**SOLUTION:**

1. clear
2. clc
3. close all
4. syms x
5. syms y
6. syms z
7. s= x^2\*y\*z^3+x\*y^2\*z^2
8. g=gradient(s, [x, y, z])
9. subs(g, [x, y, z],[1,3,2])

 *OUTPUT*

s =

 X^2\*y\*z^3 + x\*y^2\*z^2

g =

 y^2\*z^2 + 2\*x\*y\*z^3

 x^2\*z^3 + 2\*y\*x\*z^2

 3\*x^2\*y\*z^2 + 2\*x\*y^2\*z

ans =

 84

 32

 72