

1 If $\Phi = x^2 y z^3 + x y^2 z^2$, write a MATLAB in file program to determine gradient $\nabla \Phi$ at $P(1, 3, 2)$

1. Command Window
2. Clear
3. Clc
4. Syms x,y
5. Syms z
6. $A = (x^2 * y * z^3) + (x * y^2 * z^2)$
7. $U = \text{diff}(A, x)$
8. $V = \text{diff}(A, y)$
9. $W = \text{diff}(A, z)$
10. $x = 1$
11. $y = 3$
12. $z = 2$
13. $Un = \text{subs}(U)$
14. $Vn = \text{subs}(V)$
15. $Wn = \text{subs}(W)$