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17/ENG05/030

MECHATRONICS ENGINEERING

- If $\phi = x^2y z^3 + x y^2 z^2$, write a MATLAB mfile program to determine gradient point $P(1, 3, 2)$

1. Command window
2. ~~close all~~ 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. $U_n = \text{subs}(U)$
14. $V_n = \text{subs}(V)$
15. $W_n = \text{subs}(W)$