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 M/ENG07/013

Good for the points (1,3,2)

- 1) Command window
- 2) Clear
- 3) C/c
- 4) Close all
- 5) Syms x
- 6) Syms y
- 7) Syms z
- 8) $f = x^{12} * y * 2^3 + 3 + 3 + x^x + 1^{12} * 2^{12}$
- 9) $g = \text{gradient}(f, [x, y, z])$
- 10) Subs (g, [x, y, z], [1, 2, 3])

Output

$$f = x^{12} * 2^3 + x^1 y^{12} * 2^2$$

$$g = \begin{matrix} y^{12} * 2^{12} + 2^1 x^{12} y^{11} * 2^3 \\ x^{12} * 2^3 + 2^x y^{12} * x^{x-1} * 2^{12} \\ 3^{-1} x^{12} y^{12} * 2 + 2 + 2^x x^{x-1} y^{12} * 2 \end{matrix}$$

Ans - 84
 32
 72