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17/SCZ141016

Chemical Engineering

ENR 282 Assignment

1. If  $\phi = x^2yz^3 + xy^2z^2$ , Determine grad  $\phi$  at the point  $P(1, 3, 2)$

Command Window

Clear

clc

Close all

Syms x

Syms y

Syms z

$$K = x^2 * y * z^3 + x * y^2 * z^2$$

$$g = \text{gradient}(K, [x, y, z])$$

$$\text{subs}(g, [x, y, z], [1, 3, 2])$$

Answers

$$- K = x^2 * y * z^3 + x * y^2 * z^2$$

$$- g = y^2 * z^3 + z^2 * x * y * z^3$$

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

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

$\Rightarrow 84$

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