

## Answer on Question #56118 – Math – Vector Calculus

### Question

Find the gradient of the scalar field  $\varphi = xy^2z^3$ .

### Solution

$$\text{grad}\varphi = \frac{\partial\varphi}{\partial x}i + \frac{\partial\varphi}{\partial y}j + \frac{\partial\varphi}{\partial z}k = y^2z^3i + 2xyz^3j + 3xy^2z^2k.$$

**Answer.**  $y^2z^3i + 2xyz^3j + 3xy^2z^2k$ .