Answer on Question #55096 – Math – Calculus

Question

If f(x,y) =x^2y^3 - 2y^-2, find fy .

Solution

According to the statement of the problem, we have

$$f(x,y) = x^2y^3 - 2y^{-2}.$$

Hence, for f_y we obtain

$$f_y = \frac{\partial f(x,y)}{\partial y} = \frac{\partial}{\partial y}(x^2y^3 - 2y^{-2}) = x^2\frac{\partial}{\partial y}(y^3) - 2\frac{\partial}{\partial y}(y^{-2}) = 3x^2y^2 - 2\cdot(-2)\cdot y^{-3} = \\ = 3x^2y^2 + 4y^{-3}.$$

Answer: $f_y = 3x^2y^2 + 4y^{-3}$.