

(2016) 已知函数 $f(x, y) = \frac{e^x}{x-y}$, 则 ()

(A) $f'_x - f'_y = 0$

(B) $f'_x + f'_y = 0$

(C) $f'_x - f'_y = f$

(D) $f'_x + f'_y = f$

(2015) 设函数 $f(u, v)$ 满足 $f(x+y, \frac{y}{x}) = x^2 - y^2$, 则 $\frac{\partial f}{\partial u} \Big|_{u=1, v=1}$ 与 $\frac{\partial f}{\partial v} \Big|_{u=1, v=1}$ 依次是 ()

- (A) $\frac{1}{2}, 0$ (B) $0, \frac{1}{2}$ (C) $-\frac{1}{2}, 0$ (D) $0, -\frac{1}{2}$

(2014) 已知函数 $f(x, y)$ 满足 $\frac{\partial f}{\partial y} = 2(y+1)$, 且 $f(y, y) = (y+1)^2 - (2-y)\ln y$, 求曲线

$f(x, y) = 0$ 所围成的图形绕直线 $y = -1$ 旋转所成的旋转体的体积.

求下列函数的全微分:

(1) $z = xy + \frac{x}{y}$

(2) $z = \frac{y}{\sqrt{x^2 + y^2}}$

(2017) 设函数 $f(x, y)$ 具有一阶连续偏导数, 且 $df(x, y) = ye^y dx + x(1+y)e^y dy$,
 $f(0, 0) = 0$, 则 $f(x, y) =$ _____