

F(x, y, dy/dx, \dots, d^ny/dx^n) is an exact derivative if and only if $\partial F/\partial y - d/dx$ and $\partial F/\partial y_1 + \dots + (-)^n d^n/dx^n$ and $\partial F/\partial y_k = 0$, where $y_k = d^ky/dx^k$. The inductive proof here presented appears to be the shortest elementary proof yet devised. (Received November 2, 1936.)

ERRATUM

On page 497 of this volume, abstract 42-7-311 (by Professor C. C. Camp), in the statement of the lemma, replace the words "otherwise zero" by "and $h - \theta$ when $h = h' + \theta$, $0 < \theta < 1$, where h' is an integer."