Limits and Continuity

Question

For the function $f(x,y) = \dfrac{xy}{x^2 + y^2}$, which of the following expressions would help investigate the trend in the values of f as (x,y) approaches $(0,0)$ along the line $y = mx$?

A. $\dfrac{m^2 x^2}{(2m^2)x^2}$

B. $\dfrac{mx^2}{(1+m)x^2}$

C. $\dfrac{mxy}{m^2 x^2 + y^2}$

D. $\dfrac{mx^2}{(1+m^2)x^2}$