$f_x = \frac{2y}{\sqrt{x}}$ $f_y = 4\sqrt{x}$
$u = \frac{\boldsymbol{\nabla} f(4,1)}{\|\boldsymbol{\nabla} f(4,1)\|} =$
$\frac{(4,4)}{\sqrt{8}} = (\frac{2}{4}, \frac{2}{4})$
$D_u f(4,1) = (4,4) \cdot (\frac{2}{4}, \frac{2}{4}) = 4$