14.3, number 19: **Find $\frac{\partial f}{\partial x}$ and $\frac{\partial f}{\partial y}$ for $f(x,y) = x^y$.**

Answer: We compute $\boxed{\frac{\partial f}{\partial x} = yx^{y-1}}$. We rewrite $f(x,y) = e^{y \ln x}$ in order to compute

$$\frac{\partial f}{\partial y} = \ln x e^{y \ln x} = \boxed{(\ln x) x^y}.$$