Q1) Find and sketch the domain of the function \( f(x, y) = \frac{\sqrt{x-2} + \sqrt{y-1}}{x-y} \).

Q2) Find the limit, if it exists, or show that the limit does not exist:
\[
\lim_{(x,y) \to (0,0)} \frac{y^2 \sin^2 x}{x^4 + y^4}.
\]

Q3) Find the direction and the value of the minimum rate of change to the function
\[
f(x, y, z) = e^{xy} + \sin(yz) + 2^z
\] at the point \((1, 0, 2)\).