

① Find a tolerance formula $\delta = \underline{\hspace{2cm}}$

for $f(x,y) = 8x - 5y + 1$ at $(4, 3)$.

② Sketch the domain of continuity of

$$g(x,y) = \frac{x^2 y}{\sqrt{x} + \sqrt{y} + \sqrt{4-x-y}} + \ln(3-x)$$

③ $h(x) = \frac{1}{x}$ has tolerance formula $\delta = \min \left\{ \frac{|a|}{2}, \frac{a^2 \epsilon}{2} \right\}$

at $x=a$. Using this formula, how small should $|dx|$ be to guarantee that $\frac{1}{0.074 + dx}$

equals $\frac{1}{0.074}$ with an error smaller than 0.01 ?

Check your answer by computing $\frac{1}{.074}$ & $\frac{1}{.074 - \delta}$.