QUIZ 6 - MATH 251 Friday, October 25

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Read each problem **very carefully** before starting to solve it. Each problem is worth 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. Write in set notation and sketch on the plane the domain of the function $f(x,y) = \dfrac{\ln(x+1)}{\sqrt{2-2x-y}}$.

2. (a) Find the domain of $f(x,y) = \dfrac{15x^2y}{3x^3+2y^3}$. Here, you do **not** need to sketch it.

(b) Prove that the limit $\lim\limits_{(x,y)\to(0,0)} \dfrac{15x^2y}{3x^3+2y^3}$ does not exist. Please do not just write symbols; instead **precede computations by a short sentence providing an explanation of what you are intending to compute**.