

7. (16 pts)

a. (8 pts) Find the Taylor series expansion for the function  $\ln(2+x)$  centered at the point  $x = 0$ .

b. (4 pts) Using your calculator, graphically approximate the domain of convergence of this Taylor series. Accurately sketch a graph which suggests how you got your answer.

c. (4 pts) It is claimed “One way to approximate  $\ln(10)$  is to plug in 8 to the series above, using the first dozen, hundred, or even more terms. The more terms you take, the better your approximation of  $\ln(10)$ .” Explain why this plan will (or will not) work.