Show all work, clearly and legibly, to receive full credit. Correct spelling, organization of your solution, and proper use of mathematical notation all count. You may use a calculator, but no notes, books, or other resources. Good luck!

1.) (5 pts.) Does the function $h(x) = |x - 1|$ have any critical points? If so, what makes them critical points, and where are they located?

Yes: at $x = 1$

$h'(x)$ DNE. there because $h(x)$ has a corner there

2.) (5 pts.) Suppose we want to maximize the volume of a container, and we need to take into account the costs of materials. We need to find both an objective function and a constraint equation. Which of these - the objective or the constraint - will be a formula for the volume of our container?

Objective