Analysis 1
Quiz 6

Name:_____

You have 10 minutes to complete this quiz. If you have a question raise your hand and remain seated. In order to receive full credit your answer must be **complete**, **legible** and **correct**. Show your work, and give adequate explanations.

1. Define *Cauchy sequence*.

A sequence $(a_n)_{n\in\mathbb{N}}$ is a Cauchy sequence if

$$(\forall\varepsilon > 0)(\exists N)(\forall i)(\forall j)((j > i > N) \to (|a_i - a_j| < \varepsilon))$$

holds in $\mathbb{R}$.

2. State the Cauchy Criterion.

A sequence converges if and only if it is a Cauchy sequence.

Extra Credit (5 points!). Restaurants are "waitress labor-zones". Unscramble the characters in WAITRESS LABOR-ZONES to obtain the name of a theorem you heard about last week.

B O L Z A N O – W E I E R S T R A S S Theorem.