Analysis 1
Quiz 8

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. Is the empty set open in $\mathbb{R}$? Explain.

Yes. The empty set belongs to any topology, so it is an open set in any topological space.

2. Is the empty set closed in $\mathbb{R}$? Explain.

Yes. To see it is closed, we must show that the complement, $\mathbb{R} \setminus \emptyset = \mathbb{R}$, is open. But the whole space $\mathbb{R}$ is an open set in any topology on $\mathbb{R}$.