

MATH 19501 Quiz 19 - Winter 25

Name: _____ EMPLID: _____ Answer the question.

You must show all of your work as neatly and clearly as possible and indicate the final answer in the provided region for each non-graph question. For all graph questions, you should sketch your graph on the grid provided.

1. (8 points) Recall the Pythagorean Identity $\cos^2 \theta + \sin^2 \theta = 1$. Use this identity to derive the other two pythagorean identities.

(a) (4 points) Show $1 + \cot^2 \theta = \csc^2 \theta$.

(b) (4 points) Show $1 + \tan^2 \theta = \sec^2 \theta$.