Geometry
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) Show that a totally real number is real.

Suppose that z is totally real and $\alpha\colon \mathbb{C} \to \mathbb{C}$ is the identity automorphism. Then $z = \alpha(z) \in \mathbb{R}$, so z is real.

(2) Give an example of a real number that is not totally real.

$\sqrt{1 + \sqrt{2}}.$