History of Mathematical Ideas
Quiz 3

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. Explain (in words) how to construct the length $\sqrt{a}$ with straightedge and compass if you are give the lengths 1 and a.

First draw perpendicular lines X and Y so that we may refer to points by their coordinates. (This requires drawing a line X through a point O and constructing a line Y perpendicular to X through O.)

Plot points P at $(-1, 0)$ and Q at $(a, 0)$.

Draw a circle Γ with diameter PQ.

Γ intersects Y at $(0, \sqrt{a})$. The segment from $(0, 0)$ to $(0, \sqrt{a})$ has length $\sqrt{a}$.

2. State Thales' Theorem.

Thales' Theorem says that if A, B, C are distinct points on a circle and AC is a diameter, then $\angle ABC$ is a right angle.