History of Mathematical Ideas
Quiz 4

Name:_____

You have 15 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. What is meant by a *constructible number*?

A *constructible number* is a real number (=point of the x-axis) that can be constructed by straightedge and compass.

2. Given a positive length x, describe how to construct $\sqrt{x}$ using straightedge and compass.

Construct a circle with diameter of length $1 + x$. If the endpoints of the diameter are A and B, let C be the point of the diameter whose distance to A is 1 and whose distance to B is x. The line perpendicular to the diameter at C intersects the circle at points D and E, both of which are $\sqrt{x}$ units from C. (So, CD has length $\sqrt{x}$.)