History of Mathematical Ideas
Quiz 10

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. What is the general equation of a line in the projective plane?

$Ax + By + Cz = 0.$

2. What is the equation of the line at infinity in the projective plane?

$z = 0.$

$Cz = 0$ is OK, too, provided $C \neq 0$.

Note that the equation $Ax + By = 0$ does NOT define the line at infinity, since it passes through the finite point $\begin{bmatrix} 0 \\ 0 \\ 1 \end{bmatrix}$.