

Week 2 Friday

Projective Plane

Make sure you know your neighbors' names. Then discuss briefly:

Part of what you read about for today was the projective plane $\mathbb{P}^2(\mathbb{R})$. How would you describe this to someone who hasn't seen this concept before?

Quiz on Monday

Information on the [website](#).

Affine and Projective Space

1. Explain why $X = \{(x : y : z) \mid xy = z^2\}$ is a well-defined subset of $\mathbb{P}^2(\mathbb{R})$. What does $X \cap U_z$ look like? Does X contain any points at infinity? If so, which?

2. (A) True or (B) False? The set $X = \{(x : y : z) \mid x^2 + y^2 = z^2\}$ is a well-defined subset of $\mathbb{P}^2(\mathbb{R})$ containing no points at infinity.

Follow-up. Are there any points at infinity on X if we switch from \mathbb{R} to \mathbb{C} ?