Week 1 Wednesday

Spirit Animal

Make sure you know your neighbors' names, and then take about 1 minute to discuss:

If you could wake up tomorrow and be any (non-human) animal, what animal would you choose to be and why?

Ring Theory Basics

1. (A) True or (B) False?   Any field has exactly two ideals.

2. (A) True or (B) False?   The set

$$\mathbb{Q}[i] = \{a + bi \in \mathbb{C} \mid a, b \in \mathbb{Q}\}$$

is a field (using the usual addition and multiplication on $\mathbb{C}$).

3. (A) True or (B) False? $\mathbb{Z}/\langle n \rangle$ is reduced for all integers n.

4. The set

$$\mathbb{Z}[i] = \{a + bi \in \mathbb{C} \mid a, b \in \mathbb{Z}\}$$

is a ring (under the usual addition and multiplication on $\mathbb{C}$). What is $\mathbb{Z} \cap \langle 2 + i \rangle$? Give an explicit description.