The Field of Quotients of an Integral Domain- HW Problems

1. Identify the elements of the field of quotients of the integral domain $D = \{a + b\sqrt{3} \mid a, b \in \mathbb{Z}\}$.

Determine if the following statements are true or false.

2. $\mathbb{Z}$ is the field of quotients of $\mathbb{Q}$.

3. $\mathbb{Q}$ is the field of quotients of $\mathbb{Z}$.

4. $\mathbb{R}$ is the field of quotients of $\mathbb{Q}$.

5. $\mathbb{R}$ is the field of quotients of $\mathbb{C}$ (the complex numbers).

6. $\mathbb{C}$ is the field of quotients of $\mathbb{R}$.