Let $\mathbb{A}$ represent the algebraic numbers

1. Show $\frac{3}{2} \in \mathbb{A}$

2. Show $\mathbb{Q} \subset \mathbb{A}$

3. Show $\sqrt{5} \in \mathbb{A}$

4. Show $\frac{1+\sqrt{5}}{2} \in \mathbb{A}$

5. Give a real $r \notin \mathbb{A}$. How do you know this?