M317 ec 2 Assignment #2

1. Under what conditions is $\sup(A)$ not an accumulation point for A?

2. Give an example of a set with the following properties or explain why no such set is possible:

- **a**. an infinite set with no accumulation points
- **b**. a bounded set with no accumulation points
- **c**. an interval (a, b) containing only irrational numbers
- **d**. a set $A \subset R$ that contains its $\sup$ but not its $\inf$
- **e**. a finite set that does not contain its $\sup$

3. Show that every irrational number is an accumulation point of R