Some exercise for weekend

Given any real number β, show that there exists

- a monotone increasing sequence of rational numbers $\{a_n\}$ converging to β.
- a monotone decreasing sequence of rational numbers $\{b_n\}$ converging to β.
- a monotone increasing sequence of irrational numbers $\{c_n\}$ converging to β.
- a monotone decreasing sequence of irrational numbers $\{d_n\}$ converging to β.