# Mathematics Preparatory Course - MSc in EEBL

# Real-valued function II

## Exercises

1. Given $f(x) = \frac{\sqrt{x-1}}{x}$, find
   - Domain
   - Symmetries
   - Sign
   - Asymptotes
   - Stationary points
   - Monotonicity
   - min/max
   - Graph the function
2. Given $f(x) = \frac{4}{\sqrt{x^2+4}} - 1$, find
   - Domain
   - Symmetries
   - Sign
   - Asymptotes
   - Stationary points
   - Monotonicity
   - min/max

- Graph the function

3. Given $f(x) = \frac{e^{x+1}}{\sqrt{x+1}}$, find
   - Domain
   - Symmetries
   - Sign
   - Asymptotes
   - Stationary points
   - Monotonicity
   - min/max
   - Graph the function
4. Given $f(x) = \sqrt{\frac{x^3}{x^2-1}}$, find
   - Domain
   - Symmetries
   - Sign
   - Asymptotes
   - Stationary points
   - Monotonicity
   - min/max
   - Graph the function