# Blatt 4
## Elias Gestrich

**Aufgabe 4.1:**

|     | x-Wert | $n$ | Approximation | Exaktwert | Fehler |
|-----|--------|-----|---------------|-----------|--------|
|     | -1 | 0 | $\approx 0.3160$ | $\approx 0.2689$ | $\approx 17.49\%$ |
|     | -1 | 1 | $\approx 0.2937$ | $\approx 0.2689$ | $\approx 9.219\%$ |
|     | -1 | 2 | $\approx 0.2857$ | $\approx 0.2689$ | $\approx 6.217\%$ |
|     | -1 | 5 | $\approx 0.2774$ | $\approx 0.2689$ | $\approx 3.132\%$ |
|     | -1 | 10 | $\approx 0.2735$ | $\approx 0.2689$ | $\approx 1.711\%$ |
|     | -1 | 50 | $\approx 0.2699$ | $\approx 0.2689$ | $\approx 0.3693\%$ |
|     | -1 | 100 | $\approx 0.2694$ | $\approx 0.2689$ | $\approx 0.1865\%$ |
|     | -1 | 1000 | $\approx 0.2690$ | $\approx 0.2689$ | $\approx 0.01882\%$ |
| c.  | 0 | 0 | $\frac{1}{2}$ | $\frac{1}{2}$ | $0\%$ |
|     | 1 | 0 | $\approx 0.6840$ | $\approx 0.7311$ | $\approx 6.437\%$ |
|     | 1 | 1 | $\approx 0.7063$ | $\approx 0.7311$ | $\approx 3.392\%$ |
|     | 1 | 2 | $\approx 0.7143$ | $\approx 0.7311$ | $\approx 2.287\%$ |
|     | 1 | 5 | $\approx 0.7226$ | $\approx 0.7311$ | $\approx 1.152\%$ |
|     | 1 | 10 | $\approx 0.7265$ | $\approx 0.7311$ | $\approx 0.6295\%$ |
|     | 1 | 50 | $\approx 0.7301$ | $\approx 0.7311$ | $\approx 0.1358\%$ |
|     | 1 | 100 | $\approx 0.7306$ | $\approx 0.7311$ | $\approx 0.06861\%$ |
|     | 1 | 1000 | $\approx 0.7310$ | $\approx 0.7311$ | $\approx 0.006923\%$ |