Consider the function

$f(x) = \ln(\beta - |x|)$ for $-1 \leqslant x \leqslant 1$, with $\beta > 1$

- Consider two values of β close to 1 and three different values of n for each of these. Use the function provided to compute the approximations for each case.
- For each value of β, plot $f(x)$ and the three Chebyshev approximations to it on one graph, and plot the three error functions on another.
- Plot the error for $f(x) = \ln(\beta - |x|)$ with one value of n and the two values of β.