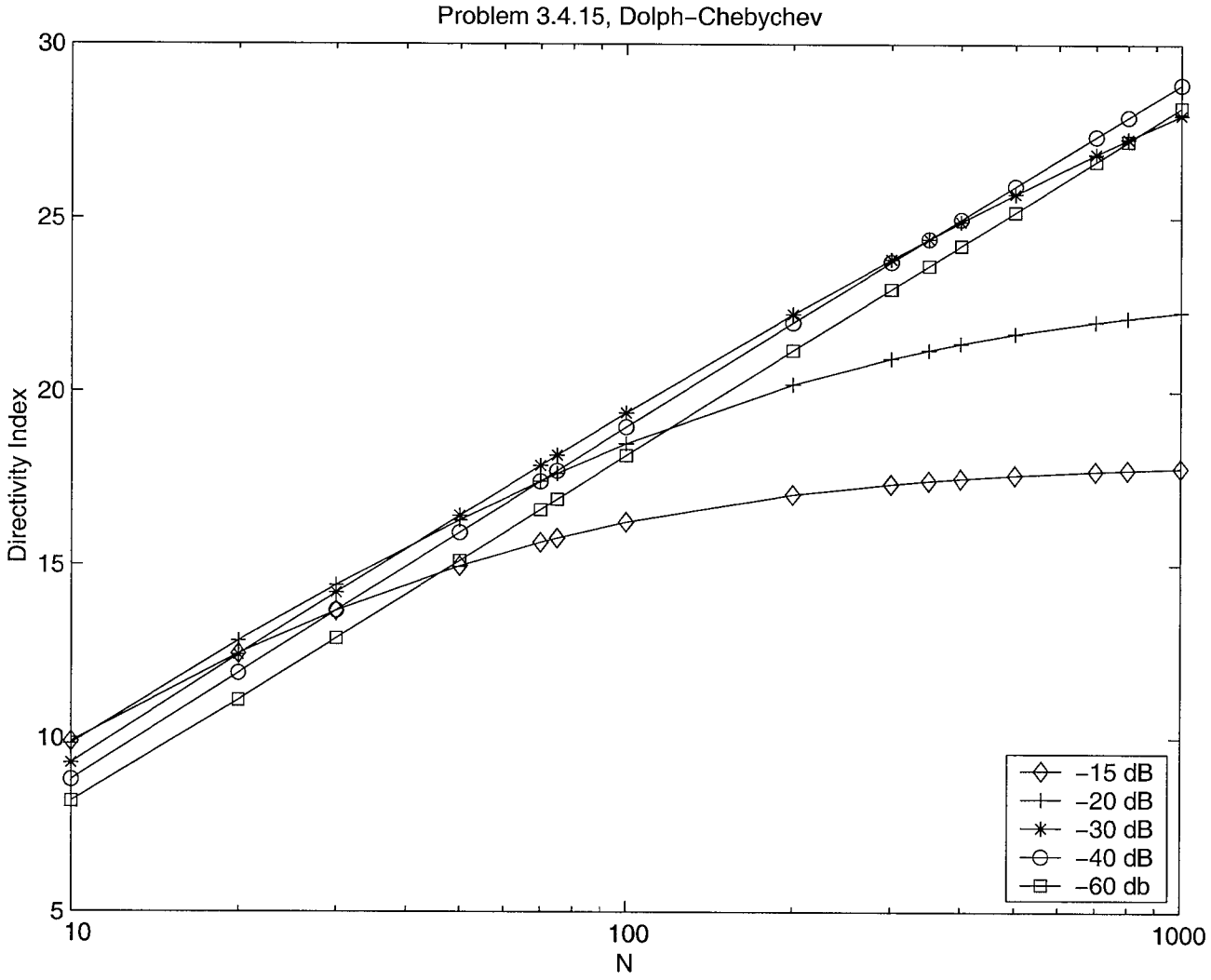

A more numerically stable way to find Dolph-Chebychev weights is

(i) $R = 10^{(-SL/20)}$

(ii) $x_0 = \cosh\left(\frac{1}{N-1}\cosh^{-1}(R)\right)$ (3.145)

(iii) $B(\varphi_k) = \frac{1}{R} T_{N-1}(x_0 \cos(\varphi_k/2))$ (3.150)

$$\varphi_k = \frac{2\pi}{N}\left[-\frac{(N-1)}{2} : 1 : \frac{(N-1)}{2}\right]$$

(iv) use IDFT procedure (p. 124) to find weights

a) $DI_B = -10\log_{10}(w^* w)$

b) Directivity levels out with N for low sidelobe levels. This is because we are forcing them higher than a uniform weighting pattern.