

$$\mathbf{v}[\mathbf{k}] = V(k) + \mathcal{O}^*(2^{-d}\frac{4}{\pi}2^{2k}), \quad \mathbf{w}[\mathbf{k}] = W(k) + \mathcal{O}^* \left( 2^{-d}\frac{1}{k!}\left(\frac{\pi}{2}\right)^k \right),$$