

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