

The graph of T^n has 2^{n-1} symmetric “spikes” with peaks at $x = p/2^n$ where p is an odd integer. The sides of each spike have slope $\pm 2^n$. Finally, note that T^n is not differentiable at the 2^{n+1} points contained in $\{p/2^n \mid 0 \leq p \leq 2^n\}$.

The following additional exercises suggest a relationship between the doubling map D and the tent map T .

20. Compute $T \circ D(x)$ and compare with $T^2(x)$ computed in Exercise 15.
21. Compute $T \circ D \circ D(x)$ and compare with $T^3(x)$ computed in Exercise 18.