index	rev(index)	
1 x 0	0 rev(x) 1	∀ index, index > rev(index). Return.
0 x 0	0 rev(x) 0	index < rev(index) when x < rev(x).
1 x 1	1 rev(x) 1	∀ x : x < rev(x), swap index and rev(index) by recursing on a problem 2 bits smaller.
0 x 1	1 rev(x) 0	∀ index, index < rev(index). Swap ∀ index.