Quantum mechanics often manifests itself in counter-intuitive ways. When an ensemble of ultra-cold atoms are squeezed into one-dimensional (1D) space and made to interact with each other very strongly, the quantum properties of the system become particularly pronounced. On the other hand, strongly interacting many-body systems are notoriously difficult to study theoretically. However, there are theoretical tricks one can use to study 1D strongly interacting systems. In this talk, I will discuss how a strongly interacting 1D system can be mapped to a weakly interacting one, which is amenable to perturbation calculations. I will also discuss a novel method we recently developed to calculate the correlation functions and momentum distribution of such systems, which exploits an interesting connection between 1D bosons/fermions and 1D anyons.