Abstract: This talk is about commutativity which is a very important topic in mathematics, physics, engineering and many other fields. Two processes are said to be commutative if the order of "operation" of these processes does not matter. A typical example of two processes in real life that are not commutative is the process of opening the door and the process of going through the door.

Importance of commutativity can be seen in signal processing. Signals pass through filters (often called operators on a Hilbert space by mathematicians) and commutativity of two operators corresponds to having the same result even when filters are interchanged.

Many important relations in mathematics, physics and engineering are represented by operators satisfying a number of commutation relations.

In this talk I treat commutativity of monomials of pairs of operators satisfying certain commutation relations. This means that the operators do not actually commute but there is an explicit relation for the difference of the two possible products of the operators. I consider products of powers of the operators, called monomials, and derive commutativity conditions of the said monomials. I show that this is related to the existence of periodic points of certain one-dimensional dynamical systems.