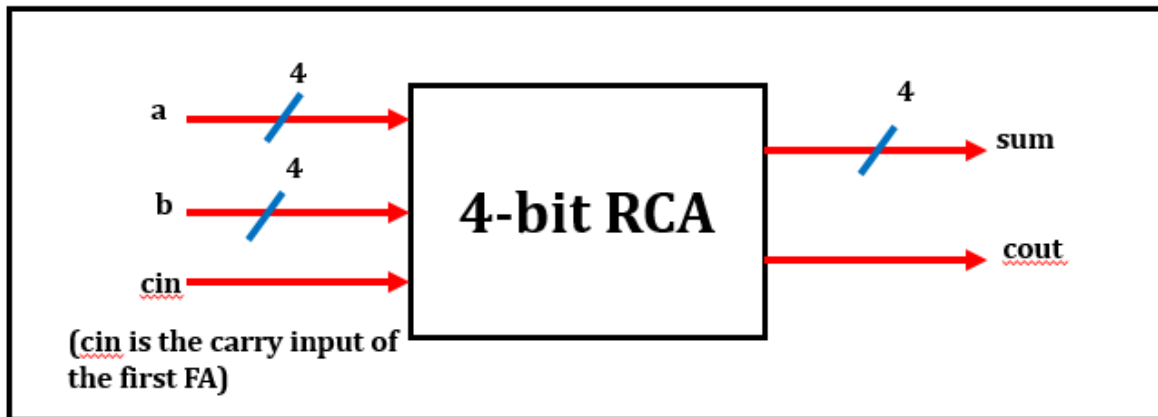# Problem set 5

Write VHDL codes of the following circuits:

1. A 4-bit Ripple Carry Adder (RCA) (considering unsigned number representation) using structural modelling style

Hints: Use the full-adder (FA) as components of top-level design, instantiate FA in your architecture using 'port map', and define the interconnection (internal wires) as 'signal' object. You must also define your component in a separate file.

Top-level entity name: rca.vhd

Component entity name: fa.vhd

2. Design a MOD-12 Counter (with asynchronous reset) using VHDL with the help of a 'signal' object.