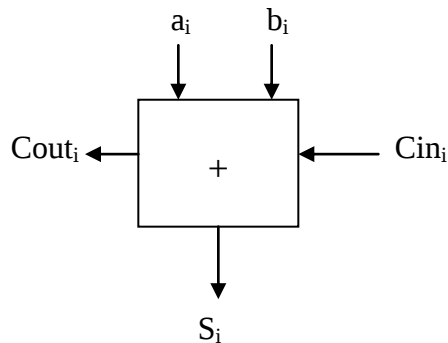


Let us assume that the delay through each 1-bit adder is as follows:

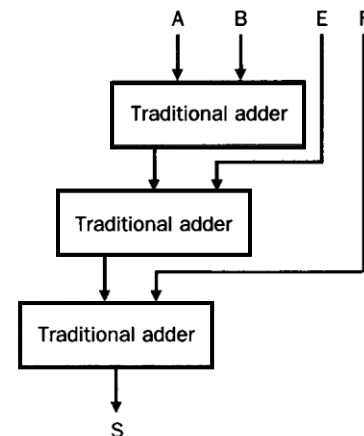
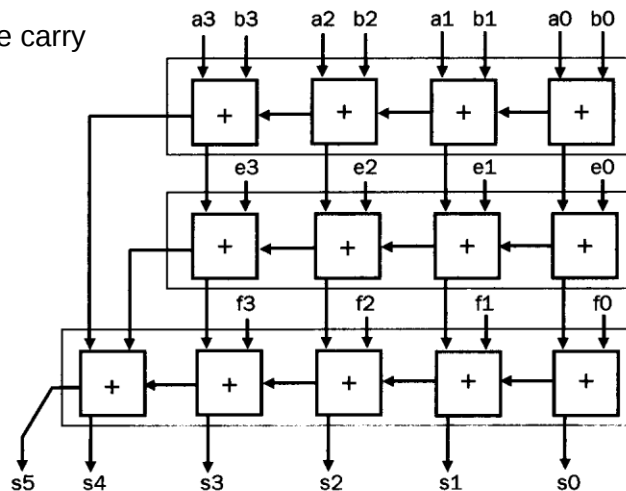


Adder output	Delay (Δ)	Delay (time)
S (sum)	3 Δ	30psec
Cout (carry out)	2 Δ	20psec

There are two organizations to add four 4-bit unsigned numbers (A, B, E, and F) as shown below. Please answer the following questions:

- Identify the critical path in each organization.
- Determine the delay in terms of delta delays (Δ)
- Determine the delay in terms of time.

I) Ripple carry



II) Carry save

