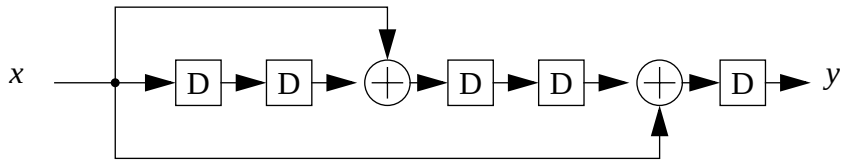
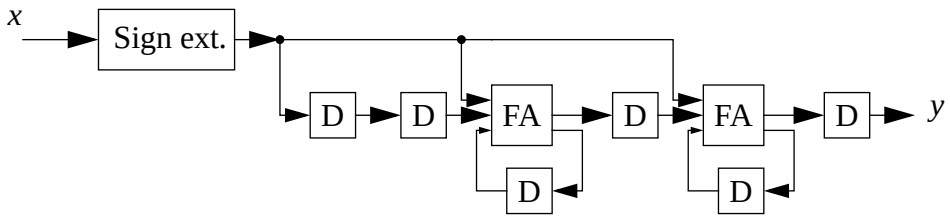
11.25 (a) $a = 2^1(1 + 2^2(1 + 2^2))$, The multiplication can be realized as follows.



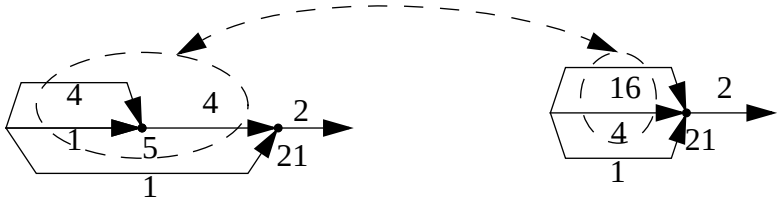
Multiplication with $a = 2^1(1 + 2^2(1 + 2^2))$

(b) The normal serial/parallel multipier for the same coeeficient can be realized as follows. The simplification steps for the multiplier is omitted here.



Multiplication with $a = 2^1(1 + 2^2(1 + 2^2))$

(c) The relationship for these two multipliers can be expressed with graph representation.



(a) (b)

Graph representations

As we can see from the graph, that they are equivalent.