Name: **Student ID:**

Scheduling Problem（调度问题）:

Please solve the following problems, given the Data Flow Graph shown in the figure, where multiplications consume **2** cycles and additions consume **1** cycle. Stipulated the adders and multipliers consist of combinational logic only.

(1) How many **adder**s (combinational logic) and **multiplier**s (combinational logic) are required in the ASAP (as soon as possible) scheduling result?

(2) How many **adder**s (combinational logic) and **multiplier**s (combinational logic) are required in the ALAP (as late as possible) scheduling result?

(3) How many adders and multipliers, at least, are required if all the operations are required to be finished in 6 cycles?

(4) How many clock cycles, at least, are required to finish all the operations if we have one adder and 2 multipliers?