

# Assignment 5: Report

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## Speed of Operation:

- Array Multiplier  
Maximum combinational path delay: 20.982ns
- Combinational Multiplier  
Maximum combinational path delay: 25.251ns
- Booth Multiplier  
Minimum input arrival time before clock: 7.451ns  
Maximum output required time after clock: 6.456ns

## Hardware Requirements:

- Array Multiplier
  1. 64X1 bit Full Adder
- Combinational Multiplier
  1. 64X1 bit Full Adder
  2. 2 X 8-bit MUX
  3. 1 X 16-bit MUX
  4. 2 X 8-bit Complementor
  5. 1 X 16-bit Complementor
- Booth Multiplier
  1. 1X12 bit adder
  2. 2X6 bit adder
  3. Comparator
  4. 1X6-bit Right Shift Register
  5. 1 mod-6 Counter

## Conclusion:

Booth Multiplier are dominant over combinational or array multiplier mainly because it saves a lot of computations by taking advantage of bit pairing.