LE8.1

LE8.1.1 Asymptotic Latency and Throughput

1/1 point (ungraded)

If we account for fan in limitations but ignore wire delays, what is the asymptotic latency of the fastest combinational N-input AND circuit we can build?

Asymptotic latency of N-input AND:

log(N) ✔

You entered:

$$\log(N)$$

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LE8.1.2 Asymptotic Latency and Throughput

1/1 point (ungraded)

Is $\Theta(log_2 N)$ the same as $\Theta(log_{10} N)$

- (●) Yes
- ( ) No
- ( ) Only for some N

✔

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LE8.1.3 Asymptotic Latency and Throughput

2/2 points (ungraded)

A combinational multiplier is pipelined for maximum throughput. If the multiplier accepts two N-bit operands, what is the appropriate "order of" notation for its throughput and latency?

Throughput $\Theta(\ldots)$: 1 ✔

1

Latency $\Theta(\ldots)$: N ✔

N

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Accounting for the fan in limitations

Calculator

"... if we have a gate with N inputs, we can't just assume that its propagation delay is the same as a 2-input gate." why not?

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