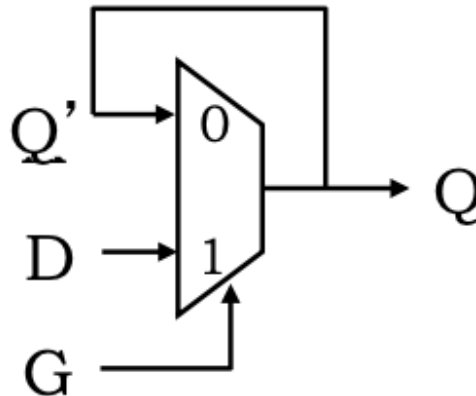


## LE5.1.1 D-latch Timing

4/4 points (ungraded)

A D-latch is constructed from a lenient MUX according to the schematic shown below.



The MUX has a propagation delay of 1.6ns and a contamination delay of 0.2ns. Please determine the appropriate timing specifications for the latch.

Latch contamination delay (ns):  ✓ Answer: 0.2

Latch propagation delay (ns):  ✓ Answer: 1.6

Latch setup time (ns):  ✓ Answer: 3.2

Latch hold time (ns):  ✓ Answer: 1.6

### Explanation

A latch's propagation delay is simply the propagation delay of the lenient MUX. Similarly the latch's contamination delay is just the contamination delay of the MUX.

In the previous video we saw that the latch's setup time is twice the propagation delay of the lenient MUX and that latch's hold time is the propagation delay of the MUX.

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**i** Answers are displayed within the problem

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Does latch hold and setup time depends only on Tpd ?**4**As according to the question, we wait for 2Tpd for setup and Tpd for hold time . (We are only thinki...