

[Course](#)

[Progress](#)

[Dates](#)

[Course Notes](#)

[Discussion](#)

[🏠](#) [Course](#) / [2. The Digital Abstraction](#) / [Lecture Videos \(33:54\)](#)



< Previous	 ✓	 ✓	 ✓	 ✓	 ✓	 ✓	 ✓	 ✓	 ✓	 ✓	 ✓	Next >
------------	---	---	---	---	---	---	---	---	---	---	---	--------

LE2.4

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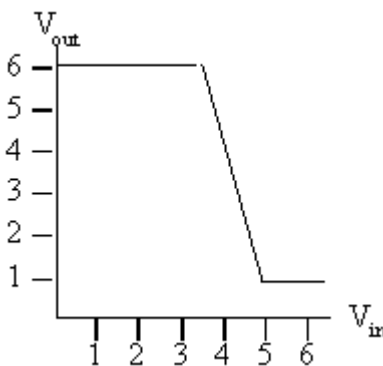
LE2.4.1: Inverter madness

4/4 points (ungraded)

As VP of Engineering at Inverters-R-Us, you've received the following four voltage transfer characteristics from your integrated circuit development lab. The goal is to decide which of the devices could be used as a combinational inverter with positive noise margins. In other words, the device obeys the static discipline and there are choices for V_{OL} , V_{IL} , V_{IH} , and V_{OH} for which $V_{IL} - V_{OL} > 0$ and $V_{OH} - V_{IH} > 0$.

For each device, indicate whether it can be used as combinational inverter.

(A)

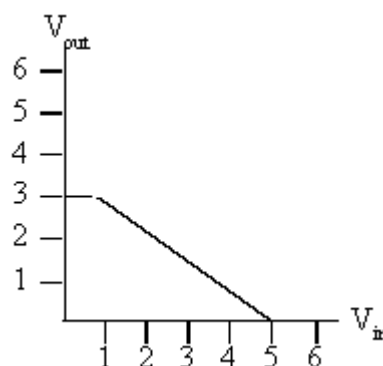


☒ Yes, usable :)

☐ No, not usable :(

✓

(B)

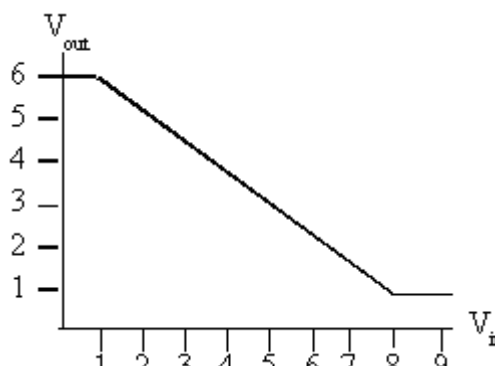


☐ Yes, usable :)

☒ No, not usable :(

✓

(C)

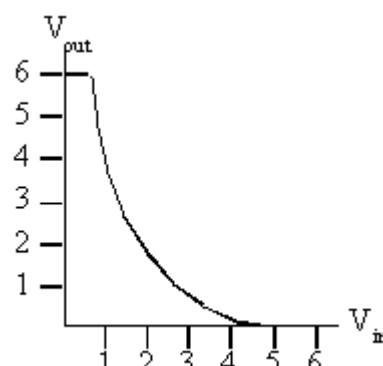


☐ Yes, usable :)

☒ No, not usable :(

✓

(D)



☒ Yes, usable :)

☐ No, not usable :(

✓

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Topic: 2. The Digital Abstraction / LE2.4

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<input checked="" type="checkbox"/>	no values that would obey the static discipline exist, the gain is never greater than one?	4	
Hi, I would like to know what this answer mean and how you can conclude it by seeing the graphs, Thx			
<input checked="" type="checkbox"/>	problem with voltages...	2	
is it absolutely necessary that the voltages folow the order v_ol < v_il < v_ih < v_oh ? or is just a convention?? thanks in advance..			
<input checked="" type="checkbox"/>	C and D		

Calculator

	I can't understand why the answers of C and D are what they are. Can someone please explain these graphs.	2
<input checked="" type="checkbox"/>	<u>Graph of D</u> Hello, I am wondering about the mention in the video about the combinatorial device's graph having to fit into a square to ensure an i...	4
<input checked="" type="checkbox"/>	<u>Device D voltage levels</u> Hi, I could conclude that V_il is 1V and V_oh is 6V, but I don't understand other two. Why V_ol could not be 1V, or similar, and why V_ih...	2

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[Next >](#)



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