

2017-2018 Spring BoEC
Solutions of HW2

1) $V = 2(2 + \cos t)i + 3 \Rightarrow$ current controlled

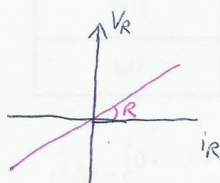
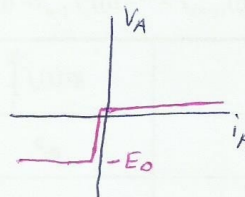
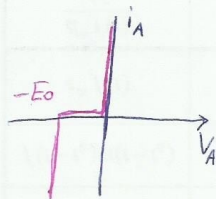
$i = \frac{V-3}{2(2+\cos t)} \Rightarrow$ voltage controlled

$f(i, v, t) = 0$ has time dependency \Rightarrow not time invariant
(or time variant)

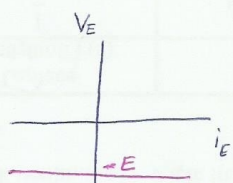
$V_1 + V_2 = 2(2 + \cos t)(i_1 + i_2) + 3 \stackrel{?}{=} V(i_1, i_2) = 2(2 + \cos t)(i_1 + i_2) + 3$
X \Rightarrow non linear

$i \rightarrow -i \quad 2(2 + \cos t)(-i) + 3 \stackrel{?}{=} -V = -2(2 + \cos t)i - 3$
X \Rightarrow bilateral
not

2)



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