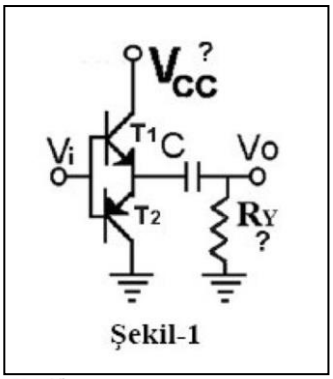
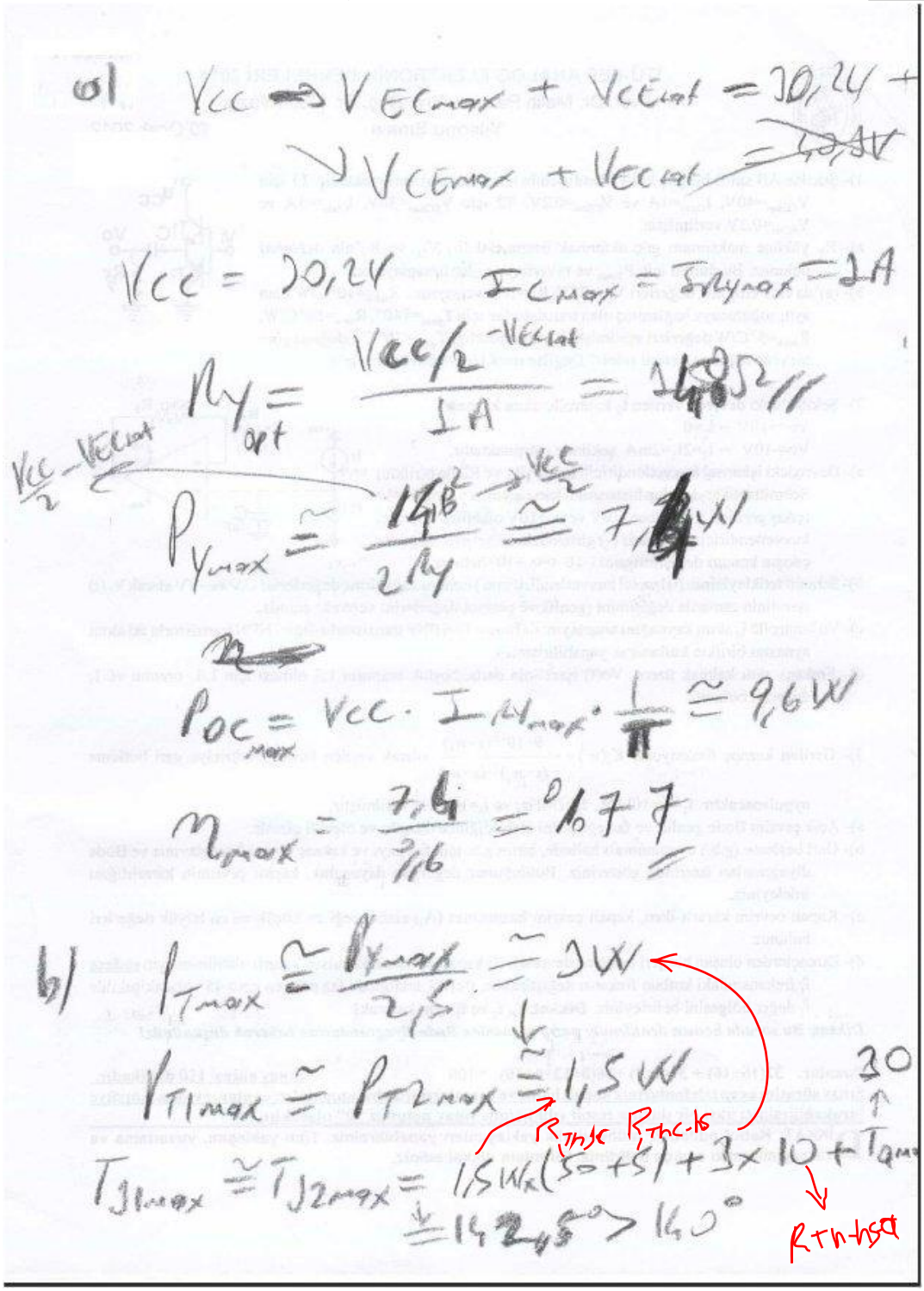
In the figure, a principle schematic of a class AB power amplifier is given. VCEmax=40V, ICmax=1A and VCEsat=0.2V is given for T1. VCEmax=30V, ICmax=1A and VCEsat=0.3V is given for T2.

a)For the maximum output power (PLmax) find RL and VCC. And for this case, find PLmax and the efficiency (η).

b)The transistors have been connected to the same heat-Sink the thermal resistance of which (Rth-hs-a) is 10 °C/W. For the transistors, Tjmax=140 °C, Rth-j-c=50 °C/W, Rth-c-hs=5 °C/W are given.The ambient temperature (Ta) is 30 °C. Is the heat-sink enough? If not, suggest one solution.(Note the this part will be solved **for VCC=32V and RY=16Ω**.)



Şekil-1



The heat-sink is not enough. For the transistors, two separate heat-sink can be used; Tj1max=Tj2max=1.5W(50+5+10)+Tamax=127.5 °C<140 °C