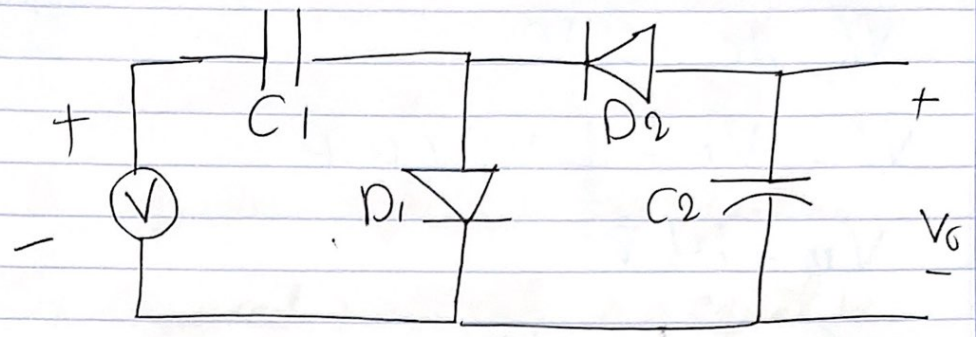
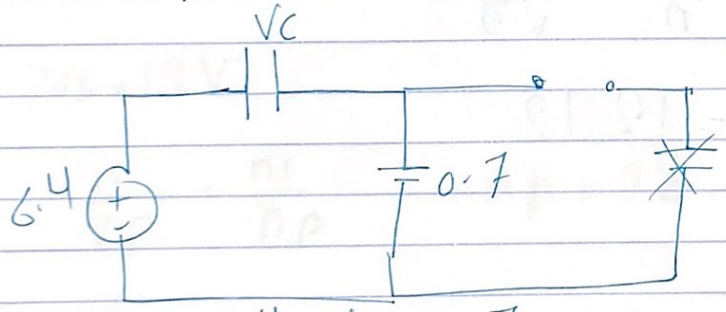
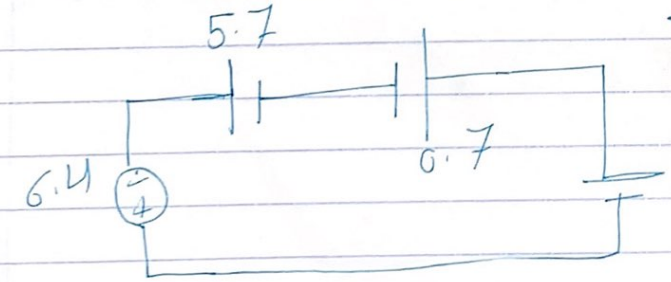


For the diode circuit shown, what will the output voltage Vo be in V if the input voltage V is a sine wave with an amplitude equals 6.4? Assume that when a diode is turned on the voltage across it will be 0.7 V



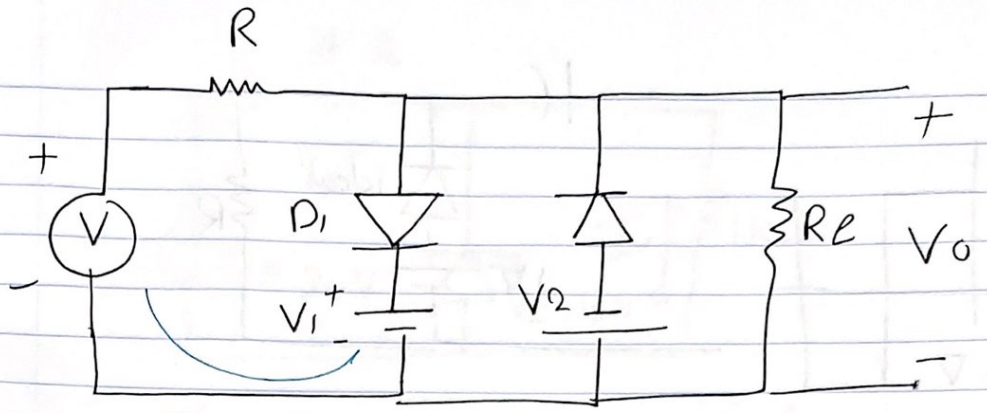
$-6.4 + Vc + 0.7 = 0$

$Vc = 5.7$

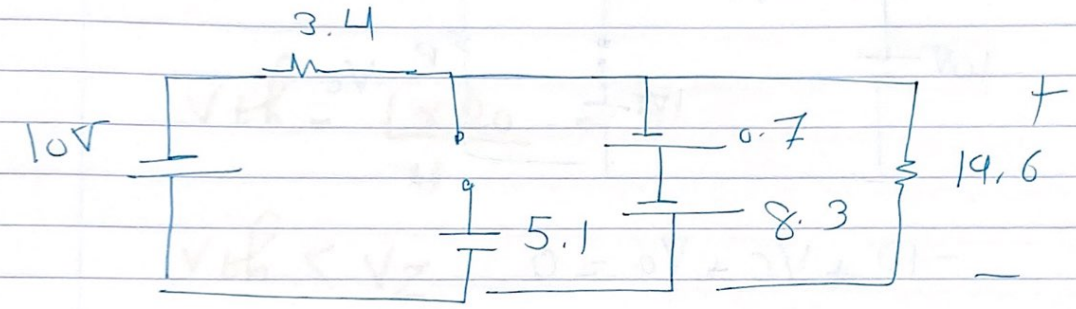


$+6.4 + 5.7 - 0.7 + Vo = 0$

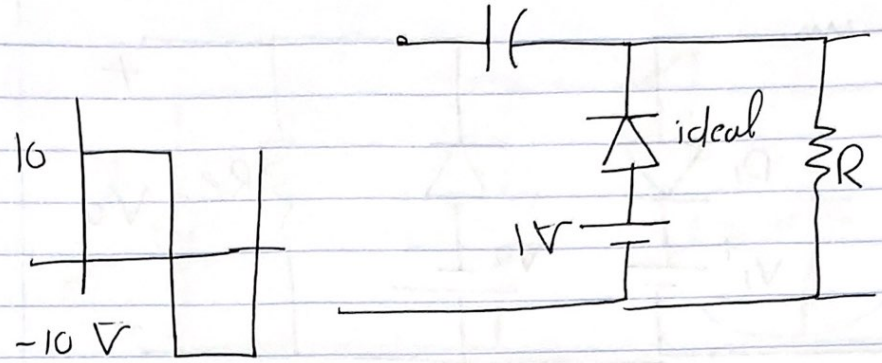
$Vo = -11.4$



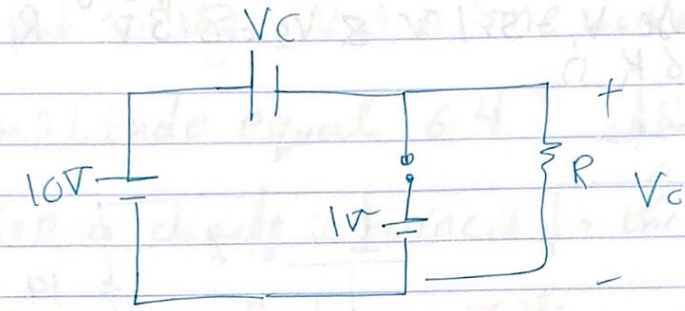
For the diode circuit shown, what will the output voltage, V_o, be in V if the input voltage V is equal to −10 V? Assume that when a diode is turned on the voltage across it will be 0.7 V, & for the batteries use $V_1 = 5.1$ V & $V_2 = 8.3$ V. $R = 3.4\,K\Omega$ $RL = 19.6\,K\Omega$



$V_o = -0.7 - 8.3 = -9$ V



what is the maximum output Voltage for this clamping circuit

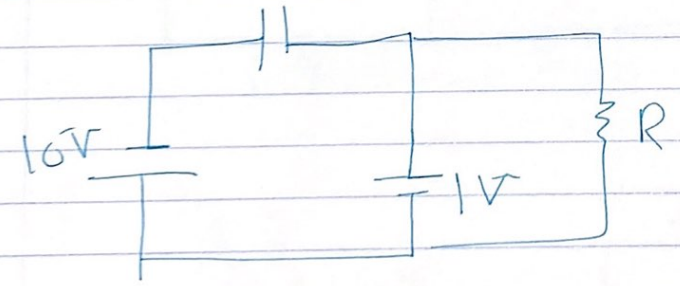


$-10 + V_C + V_o = 0$

$\Rightarrow -10 + -11 + V_o = 0$

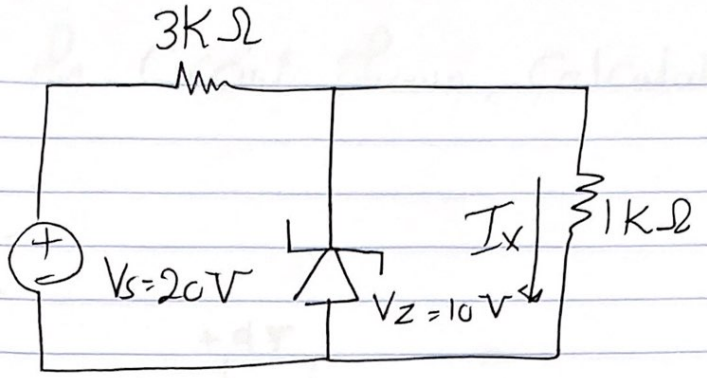
$V_o = 21\ V$

-Ve cycle



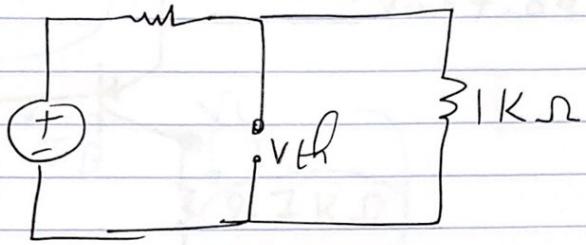
$10 + V_C + 1 = 0$

$V_C = -11$



$I_X = ?!$

1) نخصر حول أي منطقة بعمل Vth



$$V_{th} = \frac{1 \times 20}{4} = 5$$

Huda AbuZayed

$V_{th} < V_Z$

$5 < 10$ open circuit.

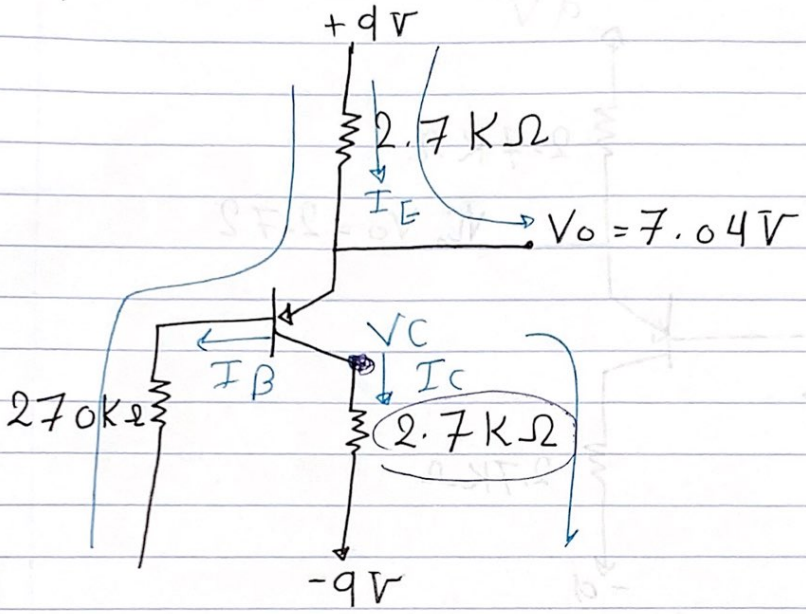
$$I_L = \frac{V_L}{R_L} = 5mA$$

For the Circuit Shown, Calculate the following

I_B =

I_C =

V_C =



$-9 + 2.7 I_E + 7.04 = 0$

$I_E = \frac{1.96}{2.7} = 0.725$

$-9 + 2.7 I_E + V_{EB} + 270 I_B = 0$

$I_B = 0.023$

~~OR~~ $I_E = (\beta + 1) I_B$ $\quad \beta + 1 = 31.52$

$\beta = 30.52$

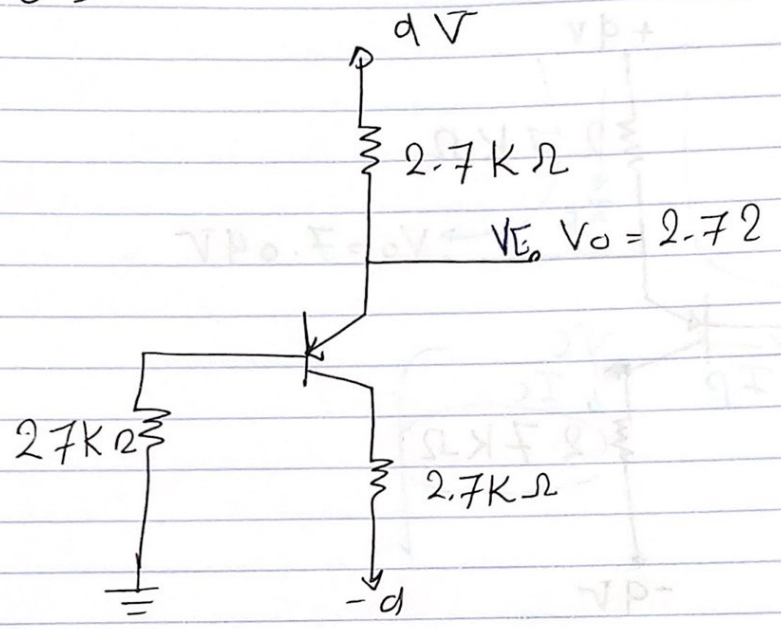
$I_C = \beta I_B = 0.702$

$-V_C + 2.7 I_C + 9 = 0 \quad V_C = -7.1046$

$I_B =$

$I_C =$

$V_C =$



$V_E = V_o = 2.72\ V$

$V_{EB} = 0.7$

$V_E - V_B = 0.7$

$V_o - 0.7 = V_B$

$V_B = 2.72 - 0.7$

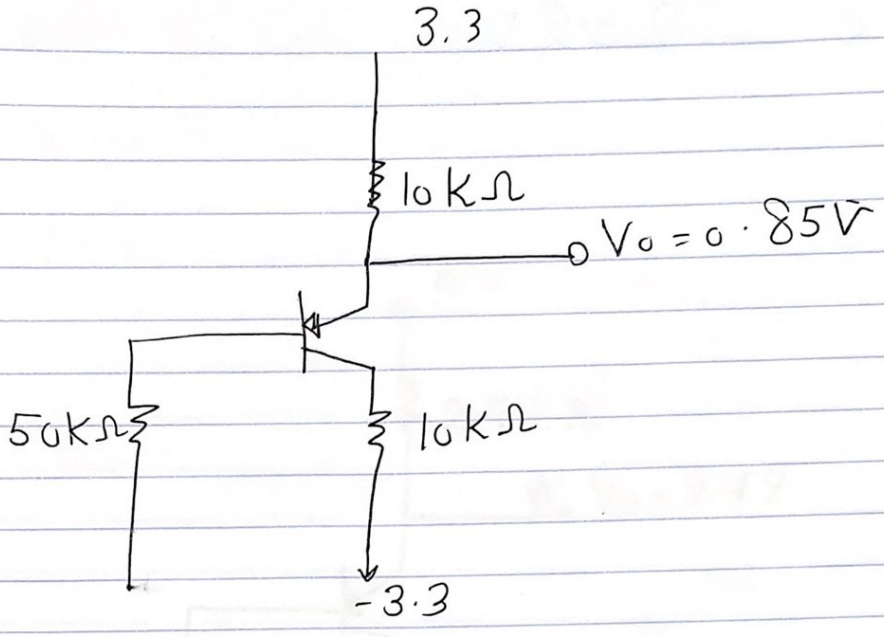
$V_B = I_B R_B$

$I_B = \frac{2.02}{27} = 0.07481$

$9 - 2.7 I_E = 2.72$

$I_E = 2.325$

$V_C = -2.72V$



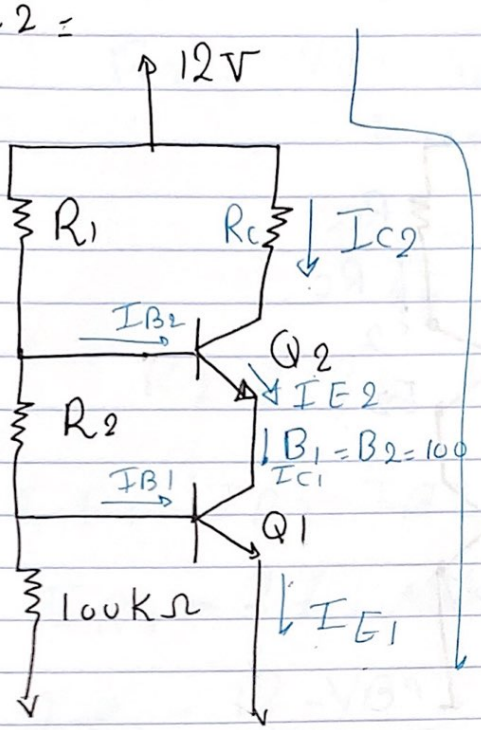
$V_C = -0.88V$

$I_\beta = 0.003mA$

$I_C = 0.242$

For the Circuit shown $I_{C2} = 1mA$ $V_{CE1} = 3V$
$V_{CE2} = 6V$

$R_C =$
$R_1 =$
$R_2 =$



$-12 + I_{C2}R_C + V_{CE2} + V_{CE1}$

$-12 + 1R_C + 6 + 3 = 0$

$R_C = 3K\Omega$

$I_{B1} = \frac{I_{C1}}{B} = 10.1\mu A$

$I_{C1} = I_{E2}$

$I_{B2} = \frac{I_{C2}}{B} = \frac{1mA}{100} = 0.01mS$

$I_{E2} = I_{B2} + I_{C2}$
$= 0.01 + 1 = 1.01mA$