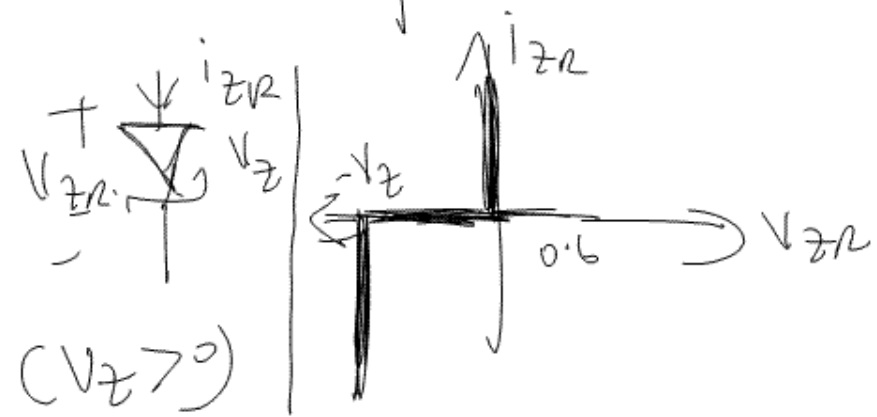


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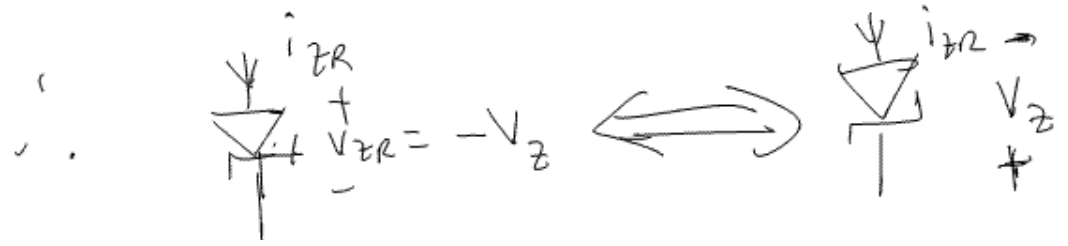
Non-ideal diode:



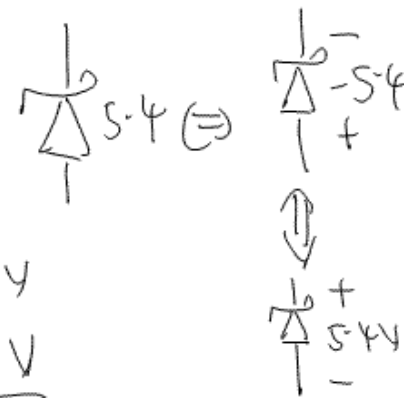
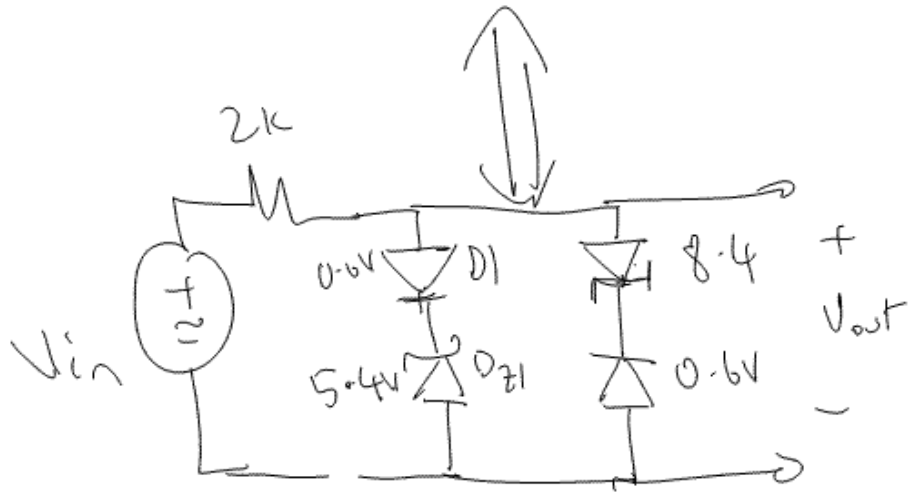
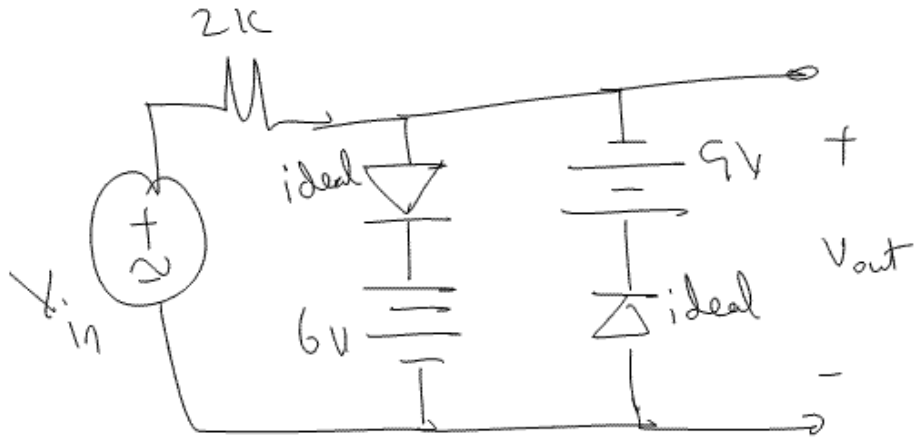
Zener diode:



$(V_z > 0)$

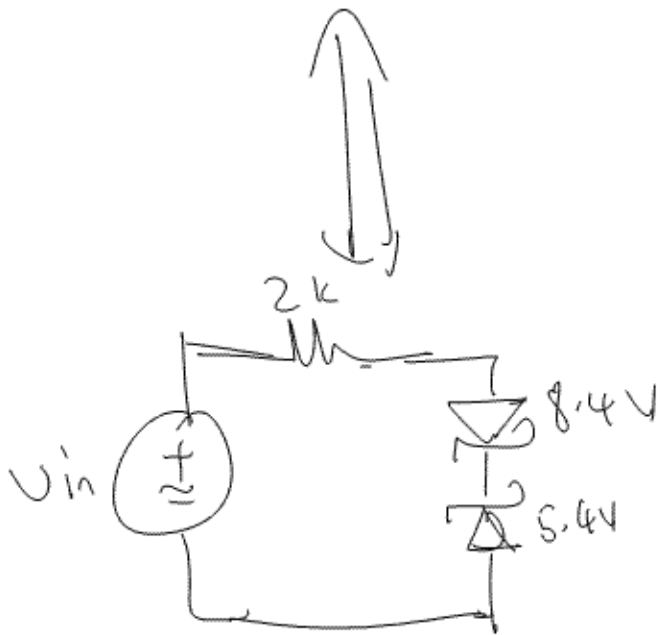
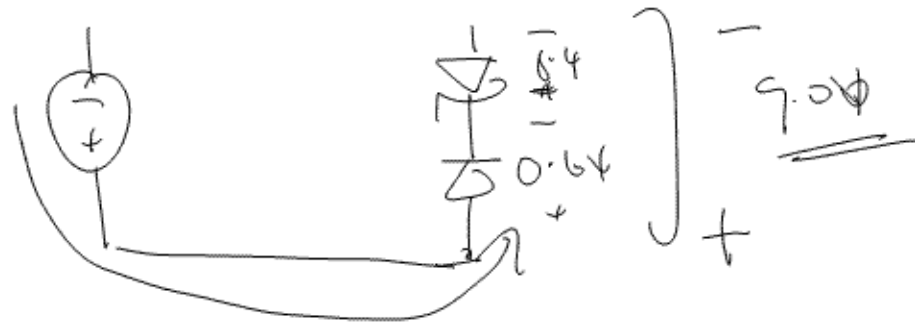


Es:



$V_{in} > 0$: $D1$ on, $D2$ off $\Rightarrow 0.6V + 5.4V$
 $\Rightarrow \underline{6V}$

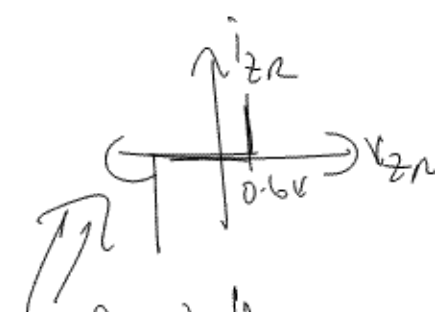
$V_{in} < 0$



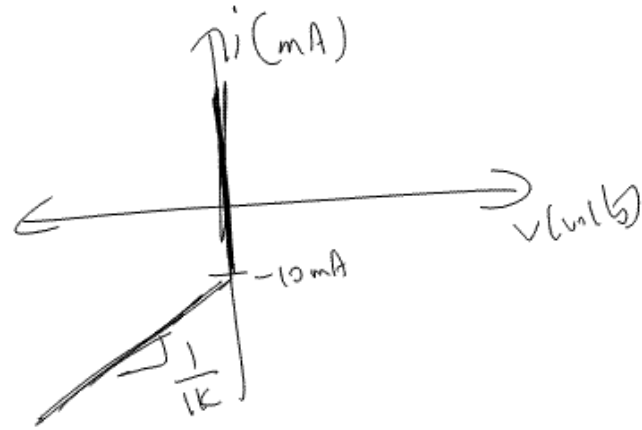
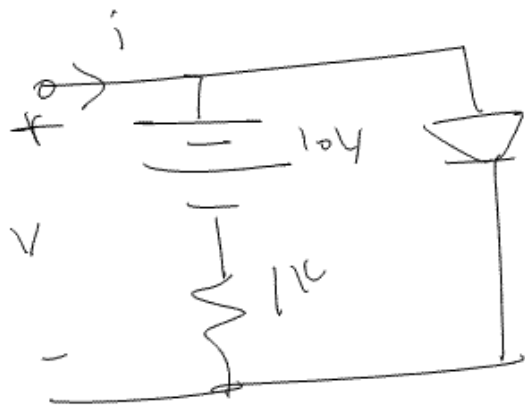
Assume turn on for both
zener is 0.6V

$V_{in} > 0, V_{clip} = 6V$

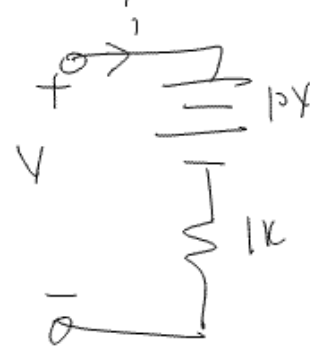
$V_{in} < 0, V_{clip} = 9V$



Ex:

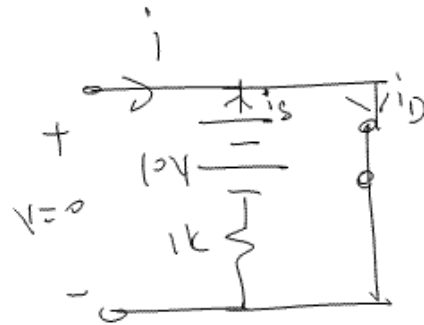


Diode turns off if $v < 0 \Rightarrow$



$$i = \frac{V - 10}{1k}$$

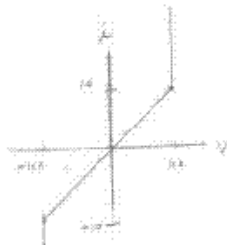
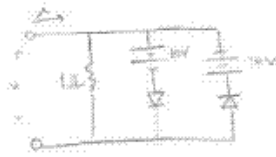
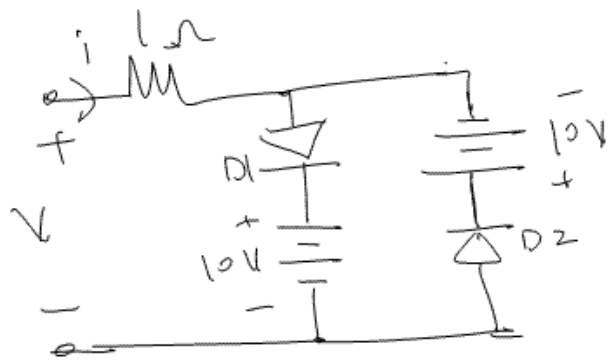
Diode turns on if $v = 0$



KCL: $i + i_S = i_D$
 $\Rightarrow i = i_D - i_S$

$$i = i_D - 10mA$$

Ex: (from yesterday):



Assuming D_1 & D_2 are ideal, plot i vs v

