

about

all + nothing = nobody      a cup of tea  
                                      a glass of water  
People run after <sup>money</sup> <sup>happiness</sup> <sup>game</sup> a bowl of soup

to hear about something

① Is UP the book that you want?

on → Monday 11 January

off → 16:00

in → March for a few days  
a relative <sup>is</sup> <sub>was</sub>

Exercice 1

① I want to change With some clean clothes.  
(4 letters).

② Russia is a Very big country.

③ He looks his brother. by Look the  
Some. (8 letters)

④ I cannot see you now. Please come back  
again Later. (5 letters).

⑤ New Zealand is Close to Australia.  
(5 letters).

⑥ Julia Roberts is one of my favorite actresses.  
(12 letters).

⑦ I go Shopping at the supermarket every  
day. (8 letters).

The look like: look the same letter: A, B, C, D

after  that  
tomorrow  
now

letter: E, F, G, H  
looking after someone  
closet = near  
close to ≠ far from

## Sure

### Course 3

- ① I'd like to ~~cancel~~ my credit card I spent too much money on it!
- ② I'd like to ~~pay~~ bank the one I'm with at the moment charges too much interest!
- ③ I'd like to ~~change~~ a credit card if I can I'm sometimes a bit short of money at the end of the month
- ④ I'd like to ~~get~~ this money into my account please.
- so I'd like to ~~close~~ my account I'm moving to another bank!
- ⑤ change ⑥ cancel ⑦ pay ⑧ get  
⑨ close
- ⑩ pay ⑪ change ⑫ cancel  
⑬ spend + to save  
⑭ cancel ⑮ change ⑯ get  
to be short of money  
To let: s/p water
- ⑰ They ate all the ~~food~~. There was ~~nothing~~ left  
⑱ Could I have a ~~bowl~~ of chicken soup,  
please? (4 letters)
- ⑲ The policemen ~~were~~ after the thief. (5 letters)
- ⑳ I've never heard ~~of~~ that company  
before. (2 letters)
- ㉑ I'll see you again ~~in~~ a few days  
12 letters
- ㉒ My bank account is building ~~that~~ ~~this~~  
every month  
(2 letters)

### Cours 3

#### Making offers

1 → f      2 → c  
3 → d      4 → b  
5 → a      6 → e

① I can't see the top off this jar → ② Do you want me to try?  
② This bag is really heavy → ③ Do you want me to take it?

③ The cash machine's not working → ④ Do you want me to lend you some money?

④ I'm really hungry → ⑤ Do you want me to make you a sandwich?  
⑤ I don't know where to go → ⑥ Do you want me to show you where it is?

⑦ Do you want me to try? → ⑧ I hate walking home in the dark.



heavy + light

strong + weak

tight + loose

lend + borrow

Banks lend money to people,  
people borrow money from banks.

#### Exercise 1 &

1. Change

2. open ≠ close

3.

4.

5.

① I'd like to

a new PIN number. I keep forgetting the one I have at the moment.

② I'd like to

a new account please.

to lend → a loan

A loan = money taken on condition if it will be paid

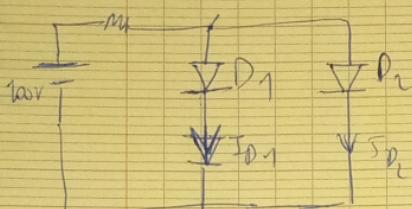
DUI

$$R_1 \in \{100\text{mV}, 1\text{V}\}$$

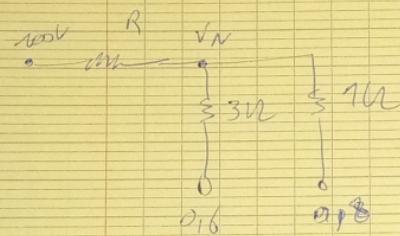
$$D_1: V_J = 0,6\text{V}, V_{D1} = 3\text{V}$$

$$D_2: V_J = 0,8\text{V} \text{ et } V_{D2} = 1\text{V}$$

$$V_N$$



calculem  $V_N$



$$V_N = \frac{100}{R} + \frac{0,6}{3} + \frac{0,8}{1}$$

$$= \frac{2}{R} + \frac{1}{3} + \frac{1}{1}$$

$$R = 1\text{K}\Omega = 1000\Omega$$

$$V_N = \frac{0,16 + 0,6 + 0,8}{0,1004 + 0,3333 + 1}$$

$$V_N = \frac{1,6}{1,3334} = 0,82\text{V}$$

$$I_{D1} = \frac{0,82 - 0,6}{3} = 0,107\text{A}$$

$$I_{D2} = \frac{0,82 - 0,8}{1} = 0,102\text{A}$$

$$20) R = 10\text{K}\Omega = 10^4\Omega$$

$$0,107 + 0,2 + 0,18$$

$$V_N = \frac{1,51}{1,3334} = 1,15\text{V}$$

$$= \frac{1,01}{1,3334} = 0,75\text{V}$$

$$I_{D1} = \frac{0,75 - 0,6}{3} = 0,105\text{A}$$

$$I_{D2} = 0,75 - 0,6 = 0,15\text{A}$$

$$\text{Dmc } I_{D2} < 0 \Rightarrow V_{D2} = 0$$

on a supposé que le bias de 2

Dmc le 2e loi de Millman n'est pas valable on va recalculer.

- Dans ce cas on a un cable courant en serie  $I_{D2}$

$$I_{D1} = \frac{100 - 0,16}{10^4 + 3} = 0,101$$

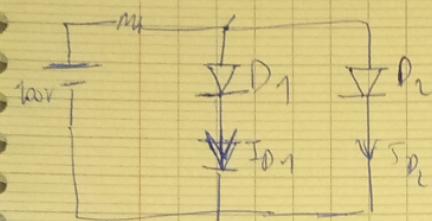
Du1

$R_1 \in \{10, 100 \text{ kV}\}$

$$D_1: V_J = 0,6 \text{ V}, R_{d1} = 3 \text{ kV}$$

$$D_2: V_J = 0,8 \text{ V}, R_{d2} = 1 \text{ kV}$$

$$V_N$$



calculer  $V_N$

$$\text{avec } R = \frac{V_N}{I_N}$$

$$\frac{100}{R} = \frac{0,6}{3} + \frac{0,8}{1}$$

$$\frac{100}{R} = \frac{0,6}{3} + \frac{0,8}{1}$$

$$V_N = \frac{100}{R} + \frac{0,6}{3} + \frac{0,8}{1}$$

$$= \frac{100}{R} + \frac{1}{3} + \frac{1}{1}$$

$$R = 1 \text{ kV} = 1000 \Omega$$

$$V_N = \frac{0,1 + 0,2 + 0,8}{0,001 + 0,333 + 1}$$

$$V_N = \frac{1,1}{1,333} = 0,82 \text{ V}$$

$$I_{D1} = \frac{0,82 - 0,6}{3} = 0,07 \text{ A}$$

$$I_{D2} = \frac{0,82 - 0,8}{1} = 0,02 \text{ A}$$

$$2) R = 100 \Omega = 10^4 \Omega$$

$$0,1 + 0,2 + 0,8$$

$$V_N = \frac{1,1}{0,001 + 0,3333 + 1} = \frac{1,1}{1,3334} = 0,75 \text{ V}$$

$$I_{D1} = \frac{0,75 - 0,6}{3} = 0,05 \text{ A}$$

$$I_{D2} = 0,75 - 0,6 = 0$$

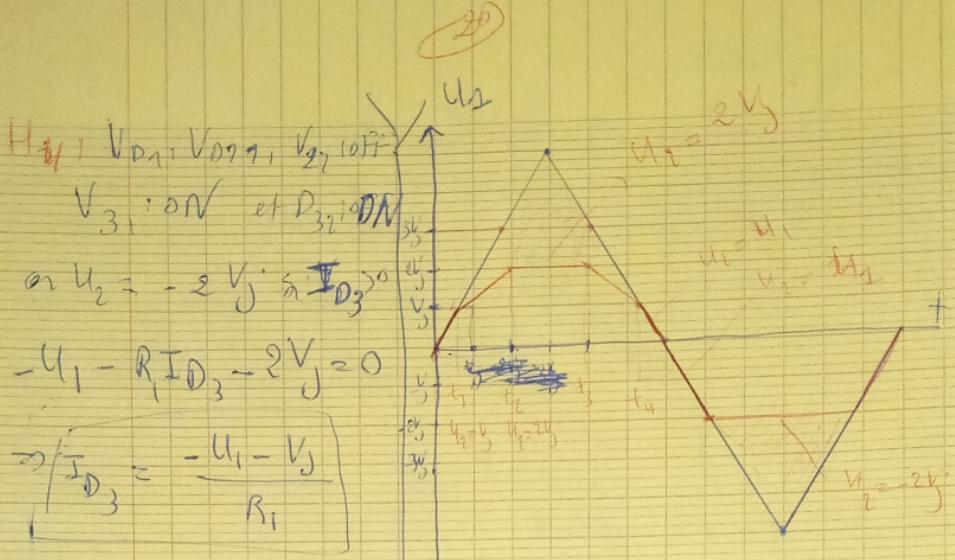
$$\text{DmC } I_{D2} < 0 \Rightarrow V_{D2} = 0$$

on suppose le diode 2

DmC lor' le Millman n'est pas valable on va recalcule.

- Dans ce cas on a un结le courant en serie les

$$I_{D1} = \frac{100 + 0,6}{10^4 + 3} = 0,01 \text{ A}$$



$$\text{or } U_1 + 2V_J < 0$$

$$\Rightarrow \{ U_1 < -2V_J \}$$

$$H_{u_1} : \begin{cases} U_2 = -2V_J \\ U_1 \in [-\infty, -2V_J] \end{cases}$$

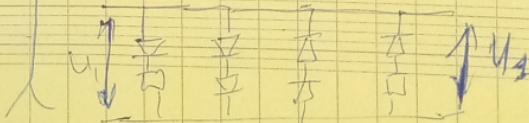
$$\begin{cases} U_2 = U_1 \\ U_1 \in [-2V_J, V_J] \end{cases}$$

(31) In a deck x selection

a) In suppose ec branchie  
qui contient  $V_{D1}$  et  $R_2$  as  
Tremme

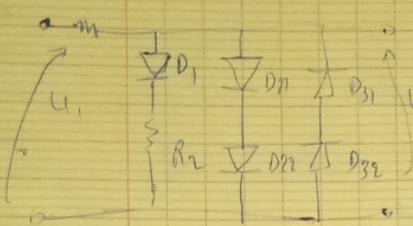


b) In deck l'onne per una branchie  $V_{D2}$



$$R_1 = R_2 = 10 \text{ k}\Omega$$

$$V_J = 0.7$$



$$\begin{aligned} U_1 &= f(U_1) : D_1 = 0 \\ &\quad R_1 I_1 + R_2 I_2 = 0 \\ -U_1 + V_{D1} &= 0 \Rightarrow U_{D1} = U_1 \end{aligned}$$

$$-U_1 + V_{D21} + V_{D22} = 0$$

$$-V_{D21} - V_{D22} = U_1 < 2V_J$$

$\left\{ \begin{array}{l} U_1 = U_2 \\ U_1 < 2V_J \end{array} \right.$

$$\begin{aligned} H_{11} & D_{12} F F D \\ U_2 &= U_1 - R_1 S R_1 - V_{D2} \\ &\quad \cancel{\text{as } U_1 < V_J \Rightarrow U_1 < 0} \end{aligned}$$

$$\text{as } U_2 = 0 \text{ can } V_{D2} < V_J$$

$$\Rightarrow U_1 = V_{D2} < V_J \Rightarrow U_1 < V_J$$

U1 < 0, VJ

$$\begin{aligned} H_1 & U_1 = 0 \\ U_2 &= 0 \quad U_1 \in [0, V_J] \end{aligned}$$

$$\begin{aligned} H_2 & D_1 \text{ is ON } D_{21}, D_{22}, \text{ or } \\ &\quad \text{as } V_J > 0.7 \Rightarrow \overline{D}_{21} > 0 \\ &\Rightarrow V_{D21} < V_J \Rightarrow V_{D22} < V_J \\ -U_1 + R_1 I_{D1} + V_{D1} + R_2 I_{D2} &= 0 \\ \Rightarrow D I_{D1} &= \frac{U_1 - V_{D1}}{2R} > 0 \end{aligned}$$

$$\text{or } U_1 = V_{D21} + V_{D22} \quad | V_{D1} + V_{D22} < 0 \}$$

$$\Rightarrow U_1 < 2V_J$$

$$\Rightarrow U_1 \in [V_J, 3V_J]$$

$$-U_1 + R_1 I_{D1} + 2V_{D22} = 0$$

$$V_{D22} = \frac{U_1 + R_1 I_{D1}}{2} = \frac{U_1 - U_1 - \frac{U_1 - V_J}{2}}{2}$$

$$V_{D22} = \frac{U_1 + V_{D1}}{2} \Rightarrow \frac{U_1 + V_J}{2} < V_J$$

$$U_1 + V_J < V_J \Rightarrow U_1 < 3V_J$$

$$H_2 : \left\{ \begin{array}{l} U_2 = V_J \\ U_1 \in [V_J, 3V_J] \end{array} \right.$$

$$H_3 : D_{21}, D_{22} \text{ is ON}$$

$$U_1 > 3V_J \Rightarrow U_2 = 2V_J$$

$$\Rightarrow H_3 = \left\{ \begin{array}{l} U_2 = 2V_J \\ U_3 \in [3V_J + \eta] \end{array} \right.$$