Example Exam - Basic Electricity, 08/10/2018

Name: .....

Student ID:

0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9

In the following circuit, where source voltage is $V_s = 110$ V, current and active power measurements were taken:

- $I_2 = 2$ A;
- $I_3 = 4$ A;
- $P_3 = 300$ W (measured in RL branch)

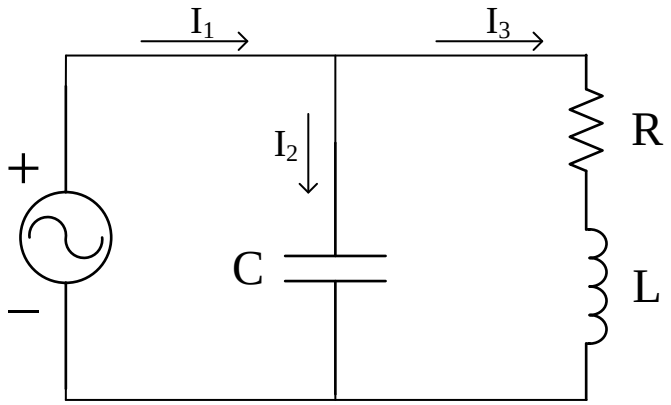
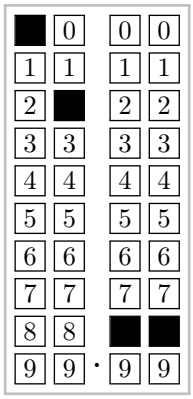
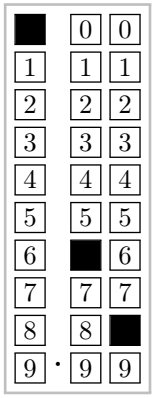


Figura 1: Circuit

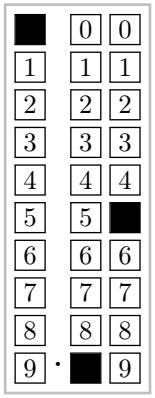
Question [q `AExamExample1-a-I1`] Find the magnitude for current I_1, in amperes.



Question [q `BExamExample1-b-pfRL`] Find the power factor in the RL branch (leading or lagging).



Question [q `CExamExample1-c-pfSource`] Find the power factor as seen from the voltage source (leading or lagging).



Question [open-ExamExample1] Describe the procedure and assumptions that should be followed to find the capacitor that adjusts the power factor to a specific value.