

ЗАДАЧА 4. РАСЧЕТ СЛОЖНЫХ ЭЛЕКТРИЧЕСКИХ ЦЕПЕЙ

Сопротивление участков цепи равны:

$$R_1 = R_3 = 5 \text{ Ом}; \quad R_2 = R_4 = R_5 = R_6 = 10 \text{ Ом}.$$

Величины напряжений и токов источников заданы в таблице вариантов.

1. Определить:

а) токи всех участков цепи методом контурных токов и методом узловых потенциалов;

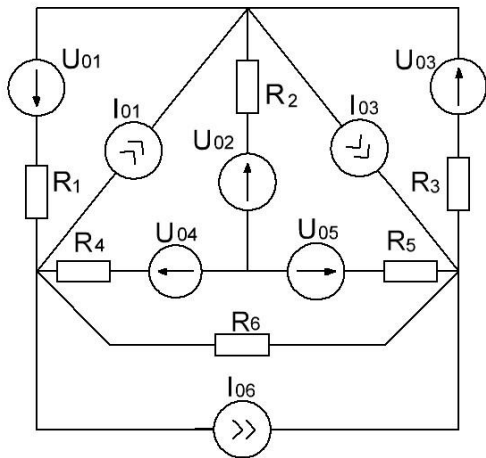
б) ток в сопротивлении R_6 методом эквивалентного генератора.

2. Составить баланс мощностей.

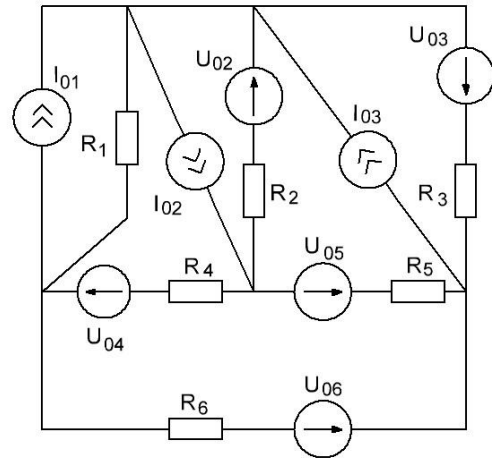
Таблица вариантов

Варианты	U_{01}	U_{02}	U_{03}	U_{04}	U_{05}	U_{06}	I_{01}	I_{02}	I_{03}	I_{04}	I_{05}	I_{06}
1	2	3	4	5	6	7	8	9	10	11	12	13
1	20	100	25	120	20	-	12	-	8	-	-	7
2	-	100	120	50	20	150	8	6	4	-	-	-
3	75	-	20	70	20	220	10	12	20	-	-	-
4	175	-	25	100	-	140	-	4	-	10	2	-
5	145	20	40	70	40	100	-	8	-	4	4	-
6	240	200	-	220	20	220	20	-	6	-	-	12
7	145	100	180	100	20	50	-	-	-	5	5	10
8	30	-	100	40	200	20	6	3	-	-	-	10
9	50	180	25	70	100	100	2	-	10	-	-	5
10	150	40	20	260	100		-	-	-	5	5	10
11	25	200	90	20	20	150	-	8	16	-	4	-
12	30	200	150	20	80	200	-	10	12	-	2	-
13	220	100	25	80	150	160	-	5	-	14	-	-
14	45	200	125	150	50	160	10	-	-	15	11	-
15	20	200	35	200	20	30	10	-	20	2	-	-
16	110	-	320	20	30	170	4	2	-	-	20	-
17	250	20	145	250	70	40	-	-	2	2	5	-
18	250	250	100	60	50	250	-	2	6	10	-	-
19	115	200	250	60	30	240	-	-	-	3	19	6
20	65	200	155	40	180	80	-	2	-	-	2	8
21	250	30	25	210	20	180	-	15	-	2	10	-
22	250	200	30	200	30	180	2	2	-	-	3	-
23	300	250	55	180	100	270	-	2	-	3	5	-
24	255	250	45	180	40	120	-	3	4	2	-	-
25	50	250	265	70	20	100	-	-	-	5	20	11
26	75	300	255	200	30	150	-	2	-	-	25	7
27	25	280	220	50	20	120	-	2	-	5	25	-
28	200	250	100	150	160	180	-	17	-	-	5	-
29	350	-	25	20	250	240	-	23	-	-	-	20
30	120	350	30	50	400	110	-	-	30	-	-	5

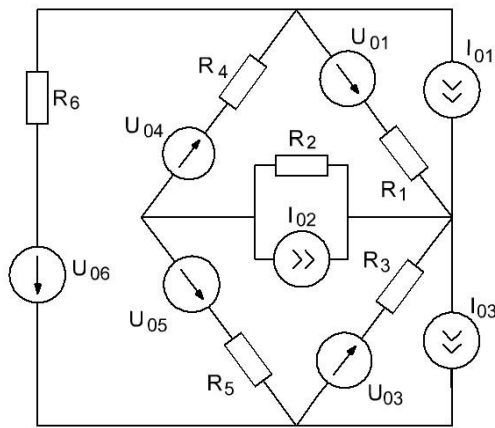
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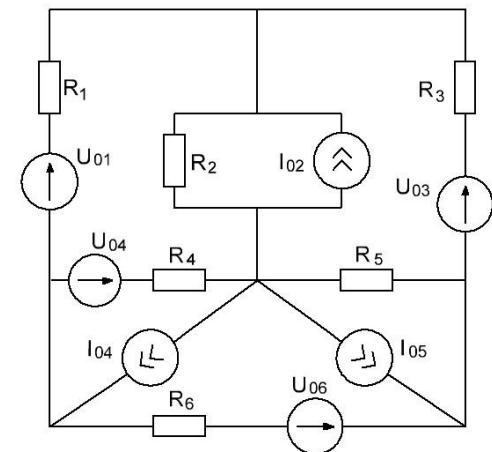
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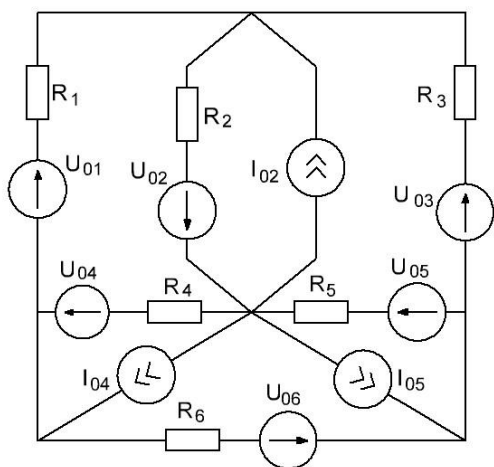
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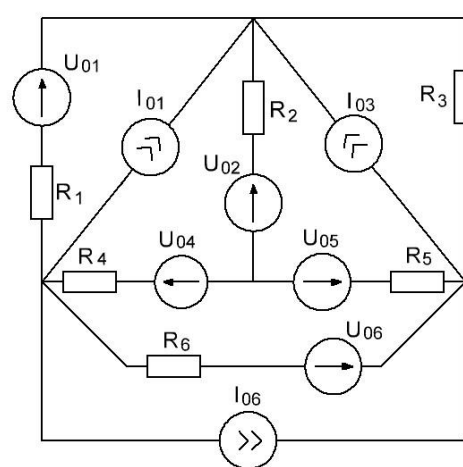
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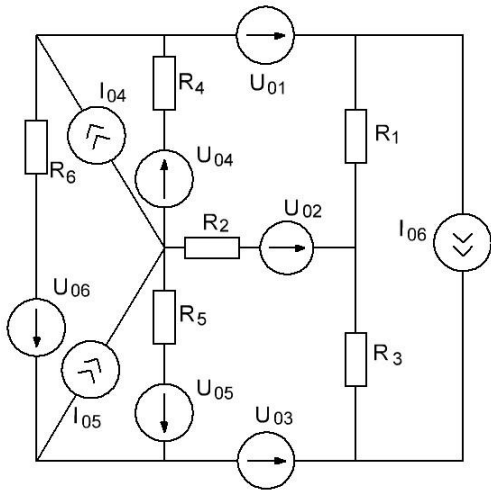
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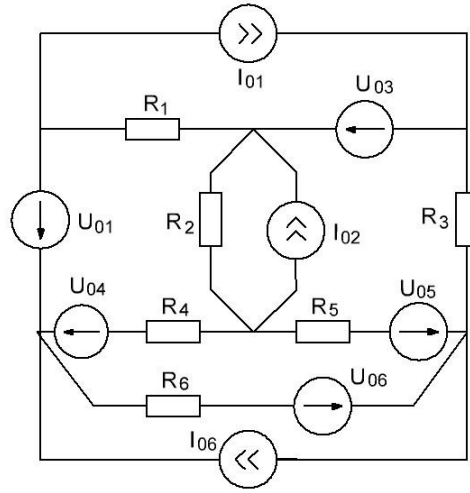
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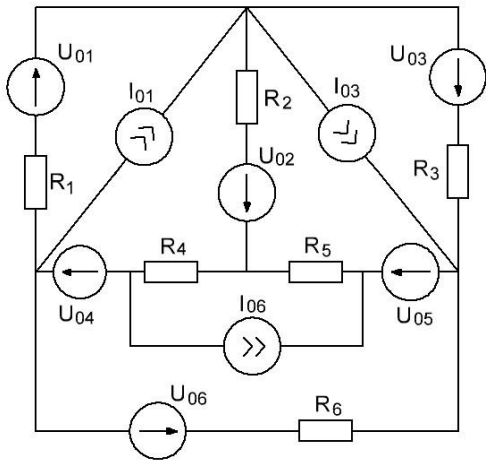
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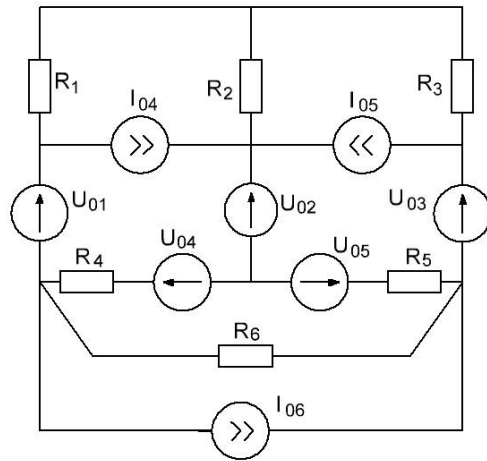
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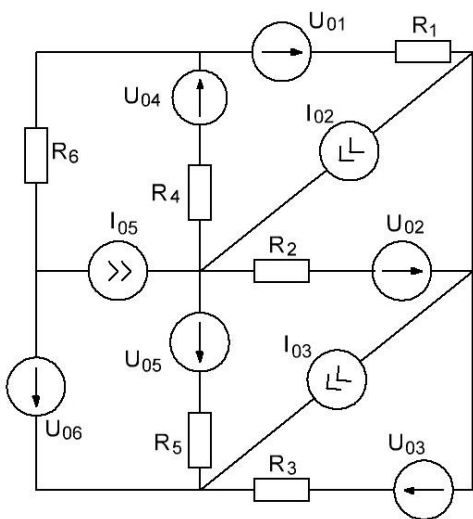
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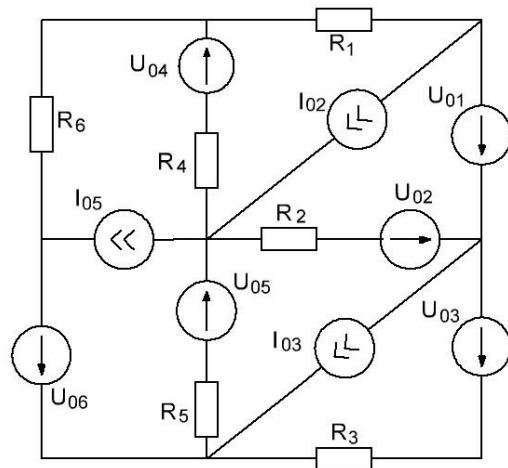
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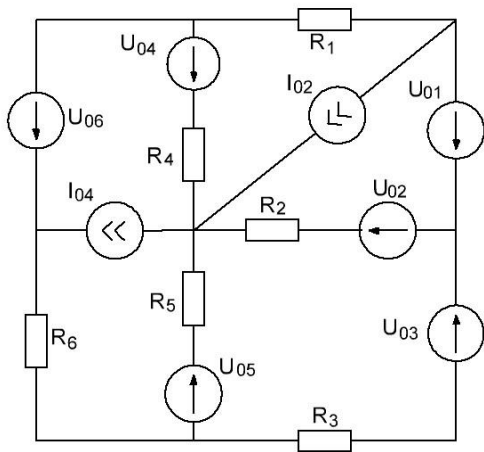
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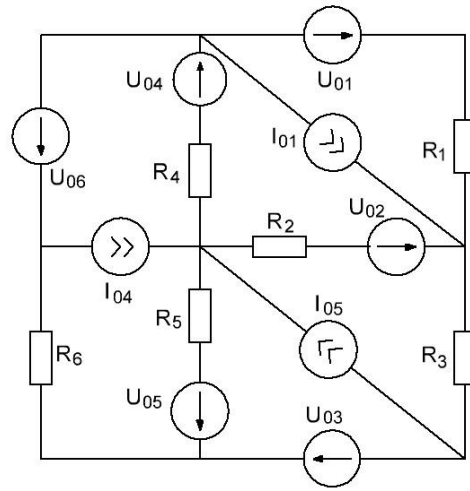
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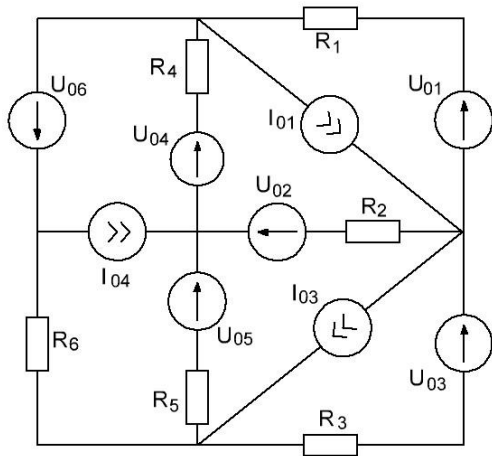
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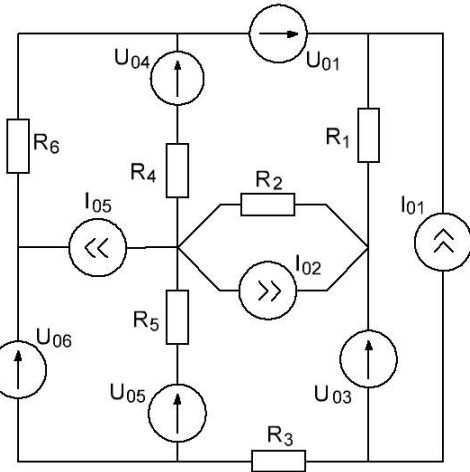
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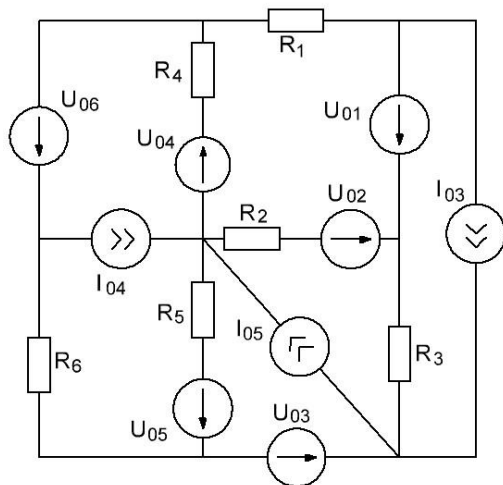
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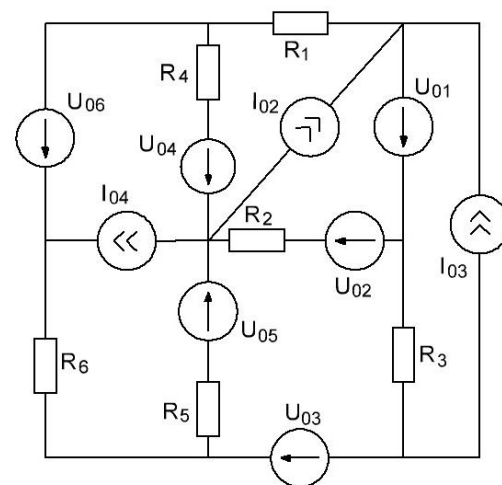
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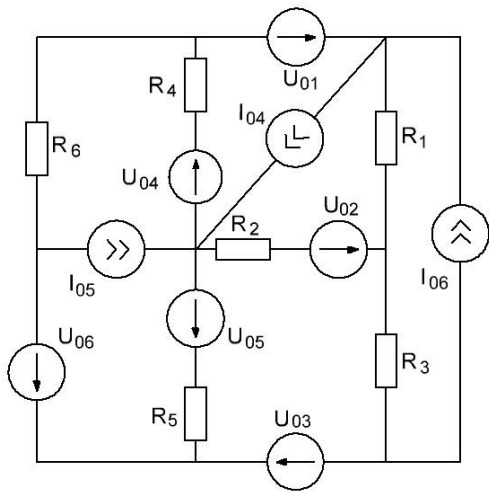
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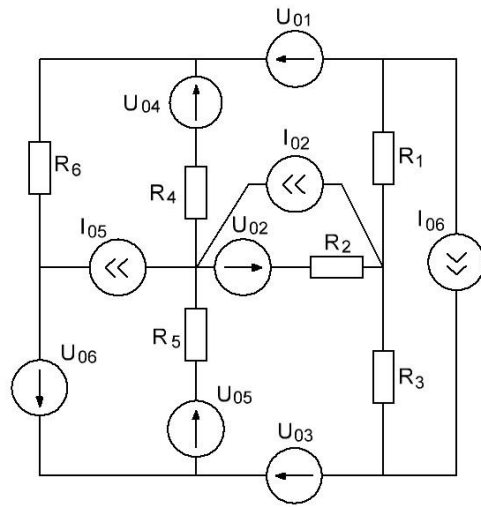
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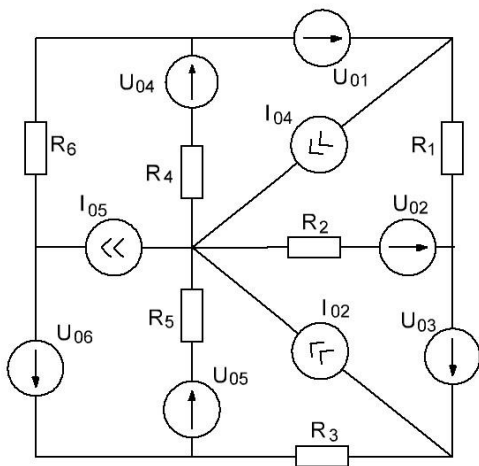
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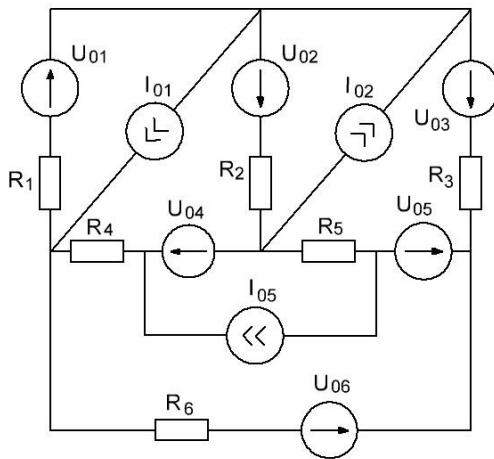
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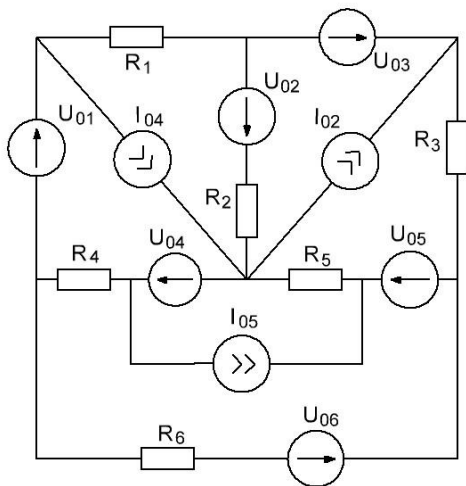
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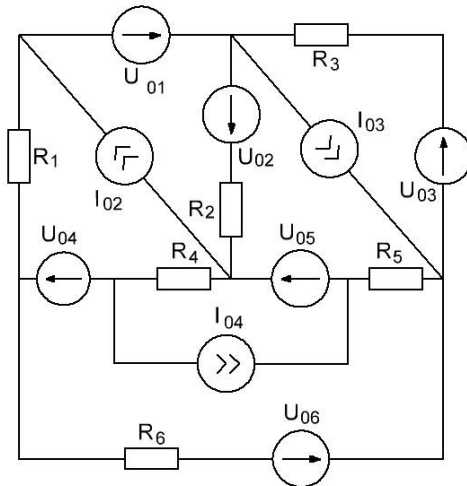
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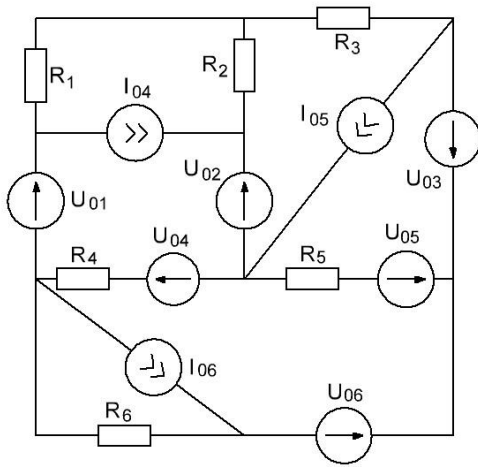
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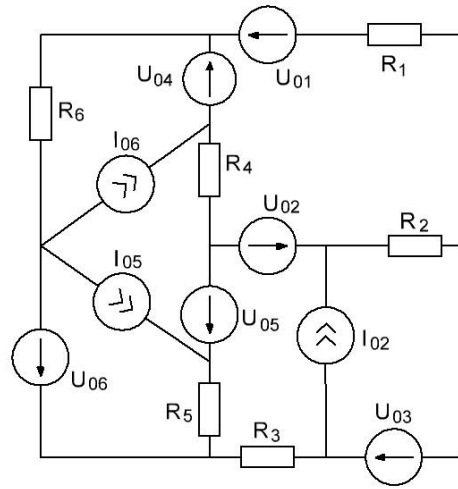
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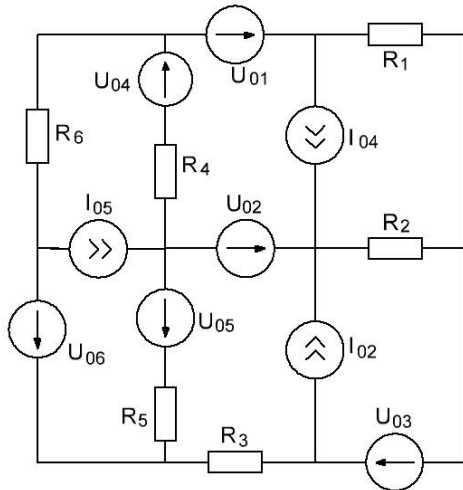
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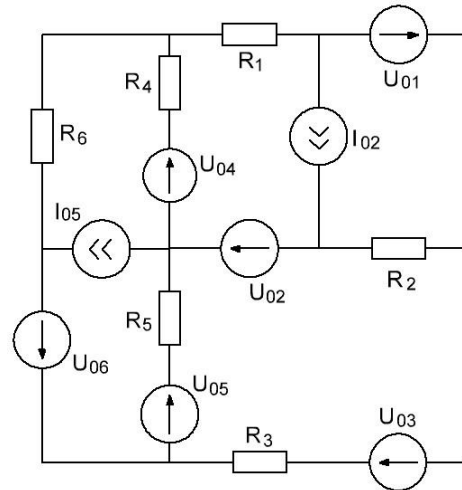
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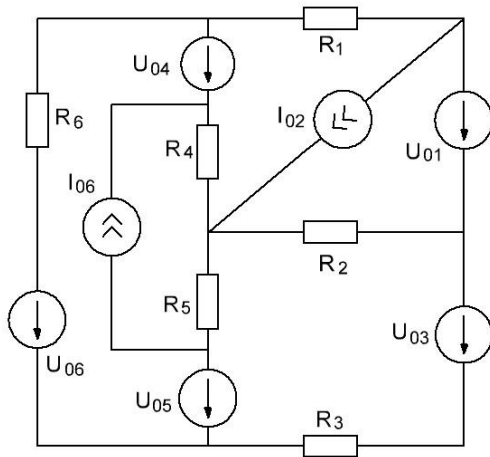
27.



28.



29.



30.

