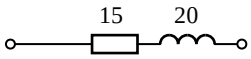
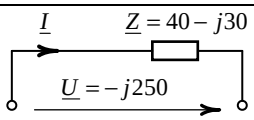
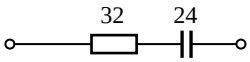
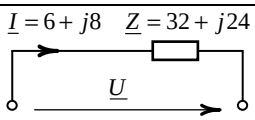
Варианты контрольного задания 1

Способы представления синусоидальных электрических величин

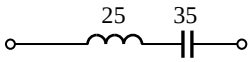
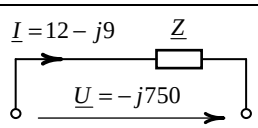
Вариант 1

№	Дано	Опр.
1	$u = 60\sqrt{2}\sin\left(\omega t - 60^{\circ}\right)$	$\underline{U}, U$
2	$\underline{I}_m = 3 - j3$	i, I
3	$\underline{U}_m = 120\sqrt{2}\,\lfloor 30^{\circ}$	u, U
4	$\underline{I} = j2\sqrt{2}$	i, I_m
5	$\underline{I} = (2 - j2)5\lfloor 90^{\circ}$	i
6	$\underline{Z} = 3 + j4$	$Z, \underline{Y}$
7		$\underline{Z}, Z$
8		$\underline{I}, I$

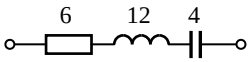
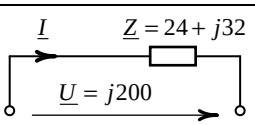
Вариант 2

№	Дано	Опр.
1	$i = 2\sqrt{2}\sin\left(\omega t + 30^{\circ}\right)$	$\underline{I}, I_m$
2	$\underline{U} = 24 + j10$	u, U
3	$\underline{I} = 3\lfloor -60^{\circ}$	i, I_m
4	$\underline{U} = 220\sqrt{2}$	u, U_m
5	$\underline{U}_m = (12 - j9)(3 - j4)$	u
6	$\underline{Z} = 8 + j6$	$Z, \underline{Y}$
7		$\underline{Z}, Z$
8		$\underline{U}, U$

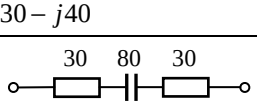
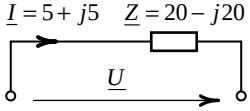
Вариант 3

№	Дано	Опр.
1	$i = \sqrt{2}\sin\left(\omega t + 45^{\circ}\right)$	$\underline{I}, I$
2	$\underline{U} = -15 + j15$	u, U_m
3	$\underline{I}_m = 4\sqrt{2}\,\lfloor -30^{\circ}$	i, I
4	$\underline{U} = -j150\sqrt{2}$	u, U_m
5	$\underline{U}_m = (6 + j8)(12 + j9)$	u
6	$\underline{Z} = 16 + j12$	$Z, \underline{Y}$
7		$\underline{Z}, Z$
8		$\underline{Z}, Z$

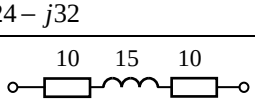
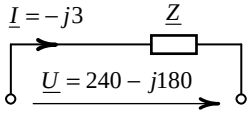
Вариант 4

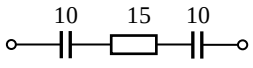
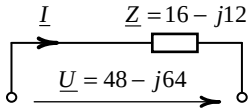
№	Дано	Опр.
1	$u = 100\sqrt{2}\sin\left(\omega t - 20^{\circ}\right)$	$\underline{U}, U$
2	$\underline{I} = 3 + j3\sqrt{3}$	i, I
3	$\underline{U} = -100\,\lfloor 45^{\circ}$	u, U
4	$\underline{I}_m = -3\sqrt{2}$	i, I
5	$\underline{I}_m = (3\sqrt{3} + j3)4\lfloor -60^{\circ}$	i
6	$\underline{Z} = 4 + j8$	$Z, \underline{Y}$
7		$\underline{Z}, Z$
8		$\underline{I}, I$

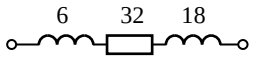
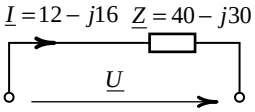
Вариант 5

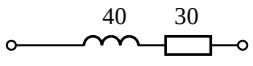
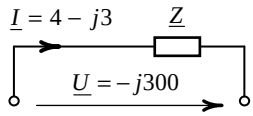
№	Дано	Опр.
1	$u = 60\sqrt{2}\sin\left(\omega t - 45^{\circ}\right)$	$\underline{U}, U$
2	$\underline{I}_m = -5 - j5$	i, I
3	$\underline{U} = 250\lfloor -90^{\circ}$	u, U
4	$\underline{I} = 5\sqrt{2}$	i, I_m
5	$\underline{U}_m = (16 - j12)(12 - j16)$	u
6	$\underline{Z} = 30 - j40$	$Z, \underline{Y}$
7		$\underline{Z}, Z$
8		$\underline{U}, U$

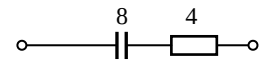
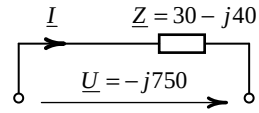
Вариант 6

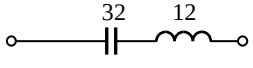
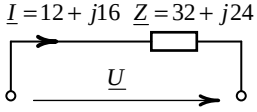
№	Дано	Опр.
1	$i = 5\sqrt{2}\sin\left(\omega t - 30^{\circ}\right)$	$\underline{I}, I_m$
2	$\underline{U} = 25\sqrt{3} - j25$	u, U
3	$\underline{I} = -2\sqrt{2}\,\lfloor 130^{\circ}$	i, I_m
4	$\underline{U}_m = -200\sqrt{2}$	u, U_m
5	$\underline{I}_m = (2\sqrt{3} + j2)5\lfloor -50^{\circ}$	i
6	$\underline{Z} = 24 - j32$	$Z, \underline{Y}$
7		$\underline{Z}, Z$
8		$\underline{Z}, Z$

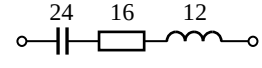
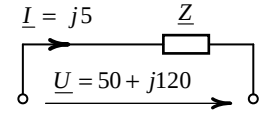
Вариант 7		
№	Дано	Опр.
1	$i = 3\sqrt{2}\sin\left(\omega t + 45^{\circ}\right)$	$\underline{I}, I$
2	$\underline{U} = 10 - j24$	u, U
3	$\underline{I}_m = -\sqrt{2}\lfloor\underline{120^{\circ}}$	i, I
4	$\underline{U} = 100$	u, U_m
5	$\underline{I} = (-3\sqrt{3} + j3)\,4\lfloor\underline{-35^{\circ}}$	i
6	$\underline{Z} = 15 + j20$	$Z, \underline{Y}$
7		$\underline{Z}, Z$
8		$\underline{I}, I$

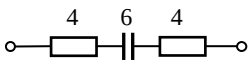
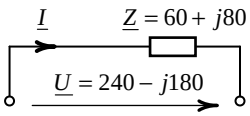
Вариант 8		
№	Дано	Опр.
1	$u = 25\sqrt{2}\sin\left(\omega t - 120^{\circ}\right)$	$\underline{U}, U_m$
2	$\underline{I} = -2 + j2\sqrt{3}$	i, I
3	$\underline{U}_m = 60\sqrt{2}\lfloor\underline{-180^{\circ}}$	u, U
4	$\underline{I} = j12$	i, I
5	$\underline{U}_m = (5 - j12)(4 - j3)$	u
6	$\underline{Z} = 60 - j80$	$Z, \underline{Y}$
7		$\underline{Z}, Z$
8		$\underline{U}, U$

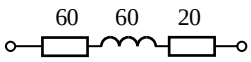
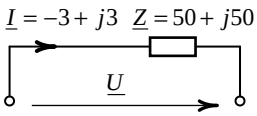
Вариант 9		
№	Дано	Опр.
1	$u = 30\sqrt{2}\sin\left(\omega t + 150^{\circ}\right)$	$\underline{U}, U$
2	$\underline{I} = -2 - j2\sqrt{3}$	i, I
3	$\underline{U} = -150\lfloor\underline{-30^{\circ}}$	u, U
4	$\underline{I}_m = -j3\sqrt{2}$	i, I_m
5	$\underline{U}_m = (10 - j10)(-6 + j6)$	u
6	$\underline{Z} = 4 - j3$	$Z, \underline{Y}$
7		$\underline{Z}, Z$
8		$\underline{Z}, Z$

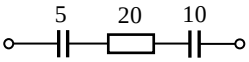
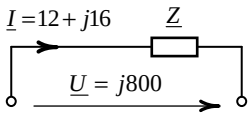
Вариант 10		
№	Дано	Опр.
1	$i = \sqrt{2}\sin\left(\omega t + 30^{\circ}\right)$	$\underline{I}, I_m$
2	$\underline{U}_m = 100 - j100$	u, U
3	$\underline{I} = 10\sqrt{2}\lfloor\underline{25^{\circ}}$	i, I_m
4	$\underline{U} = -60$	u, U_m
5	$\underline{I} = (-2 - j2)2\lfloor\underline{45^{\circ}}$	i
6	$\underline{Z} = 6 - j8$	$Z, \underline{Y}$
7		$\underline{Z}, Z$
8		$\underline{I}, I$

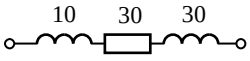
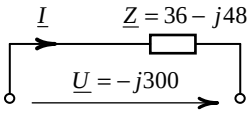
Вариант 11		
№	Дано	Опр.
1	$i = 10\sqrt{2}\sin\left(\omega t - 130^{\circ}\right)$	$\underline{I}, I$
2	$\underline{U} = -40 - j30$	u, U
3	$\underline{I} = -6\sqrt{2}\lfloor\underline{30^{\circ}}$	i, I
4	$\underline{U}_m = j130\sqrt{2}$	u, U_m
5	$\underline{I} = (6\sqrt{3} + j6)2\lfloor\underline{30^{\circ}}$	i
6	$\underline{Z} = 12 - j16$	$Z, \underline{Y}$
7		$\underline{Z}, Z$
8		$\underline{U}, U$

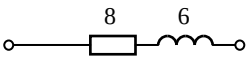
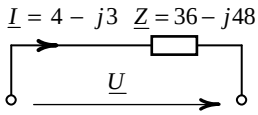
Вариант 12		
№	Дано	Опр.
1	$u = 60\sqrt{2}\sin\left(\omega t - 90^{\circ}\right)$	$\underline{U}, U$
2	$\underline{I} = 6\sqrt{3} - j6$	i, I
3	$\underline{U}_m = 40\sqrt{2}\lfloor\underline{-60^{\circ}}$	u, U
4	$\underline{I} = 10\sqrt{2}$	i, I
5	$\underline{U}_m = (32 + j24)(3 + j4)$	u
6	$\underline{Z} = 8 - j6$	$Z, \underline{Y}$
7		$\underline{Z}, Z$
8		$\underline{Z}, Z$

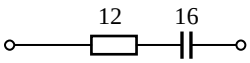
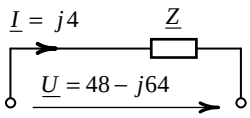
Вариант 13		
№	Дано	Опр.
1	$u = 15\sqrt{2}\sin\left(\omega t - 20^{\circ}\right)$	$\underline{U}, U$
2	$\underline{I} = -6 + j6\sqrt{3}$	i, I
3	$\underline{U} = -30\lvert\underline{-90^{\circ}}$	u, U
4	$\underline{I}_m = j15\sqrt{2}$	i, I_m
5	$\underline{U}_m = (20 - j15)(3 - j4)$	u
6	$\underline{Z} = 40 + j30$	$Z, \underline{Y}$
7		$\underline{Z}, Z$
8		$\underline{I}, I$

Вариант 14		
№	Дано	Опр.
1	$i = 2\sqrt{2}\sin\left(\omega t + 150^{\circ}\right)$	$\underline{I}, I_m$
2	$\underline{U}_m = 50 + j50$	u, U
3	$\underline{I}_m = -12\sqrt{2}\lvert\underline{90^{\circ}}$	i, I_m
4	$\underline{U} = j120$	u, U_m
5	$\underline{I} = (6 - j6)3\lvert\underline{120^{\circ}}$	i
6	$\underline{Z} = 32 + j24$	$Z, \underline{Y}$
7		$\underline{Z}, Z$
8		$\underline{U}, U$

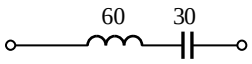
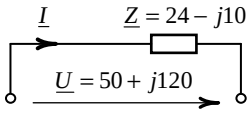
Вариант 15		
№	Дано	Опр.
1	$i = 2\sin\left(\omega t - 45^{\circ}\right)$	$\underline{I}, I$
2	$\underline{U} = -12 + j5$	u, U
3	$\underline{I} = 5\sqrt{2}\lvert\underline{-90^{\circ}}$	i, I
4	$\underline{U}_m = -24\sqrt{2}$	u, U_m
5	$\underline{I} = (4 + j4)2\lvert\underline{90^{\circ}}$	i
6	$\underline{Z} = 20 - j15$	$Z, \underline{Y}$
7		$\underline{Z}, Z$
8		$\underline{Z}, Z$

Вариант 16		
№	Дано	Опр.
1	$u = 120\sqrt{2}\sin\left(\omega t - 60^{\circ}\right)$	$\underline{U}, U$
2	$\underline{I} = 2\sqrt{3} - j2$	i, I
3	$\underline{U} = -200\lvert\underline{180^{\circ}}$	u, U
4	$\underline{I}_m = j\sqrt{2}$	i, I
5	$\underline{U}_m = (12 - j12)(5 - j5)$	u
6	$\underline{Z} = 80 + j60$	$Z, \underline{Y}$
7		$\underline{Z}, Z$
8		$\underline{I}, I$

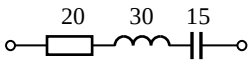
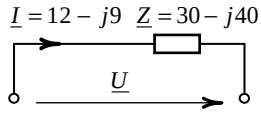
Вариант 17		
№	Дано	Опр.
1	$u = 25\sqrt{2}\sin\left(\omega t - 15^{\circ}\right)$	$\underline{U}, U$
2	$\underline{I}_m = 4 - j4$	i, I
3	$\underline{U}_m = 30\sqrt{2}\lvert\underline{-90^{\circ}}$	u, U
4	$\underline{I} = 25$	i, I_m
5	$\underline{U}_m = (12 - j12)(5 - j5)$	u
6	$\underline{Z} = 3 - j4$	$Z, \underline{Y}$
7		$\underline{Z}, Z$
8		$\underline{U}, U$

Вариант 18		
№	Дано	Опр.
1	$i = 6\sqrt{2}\sin\left(\omega t + 150^{\circ}\right)$	$\underline{I}, I_m$
2	$\underline{U} = 30 - j30$	u, U
3	$\underline{I} = -15\sqrt{2}\lvert\underline{90^{\circ}}$	i, I_m
4	$\underline{U}_m = 300\sqrt{2}$	u, U_m
5	$\underline{I}_m = (5\sqrt{3} - j5)2\lvert\underline{90^{\circ}}$	i
6	$\underline{Z} = 8 - j6$	$Z, \underline{Y}$
7		$\underline{Z}, Z$
8		$\underline{Z}, Z$

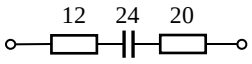
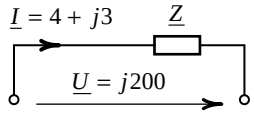
Вариант 19

№	Дано	Опр.
1	$i = 3\sqrt{2}\sin\left(\omega t - 15^{\circ}\right)$	$\underline{I}, I$
2	$\underline{U}_m = -150 + j150$	u, U
3	$\underline{I}_m = 2\sqrt{2}\lfloor 240^{\circ}$	i, I
4	$\underline{U} = -j30\sqrt{2}$	u, U_m
5	$\underline{I}_m = (5 - j5\sqrt{3})3\lfloor -60^{\circ}$	i
6	$\underline{Z} = 16 - j12$	$Z, \underline{Y}$
7		$\underline{Z}, Z$
8		$\underline{I}, I$

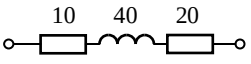
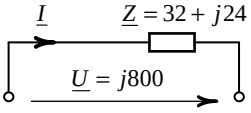
Вариант 20

№	Дано	Опр.
1	$u = 35\sqrt{2}\sin\left(\omega t + 60^{\circ}\right)$	$\underline{U}, U$
2	$\underline{I} = 1 - j\sqrt{3}$	i, I
3	$\underline{U} = 300\sqrt{2}\lfloor -45^{\circ}$	u, U
4	$\underline{I}_m = -j5\sqrt{2}$	i, I
5	$\underline{U}_m = (15 + j15)(2 + j2)$	u
6	$\underline{Z} = 4 - j8$	$Z, \underline{Y}$
7		$\underline{Z}, Z$
8		$\underline{U}, U$

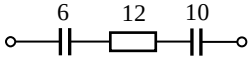
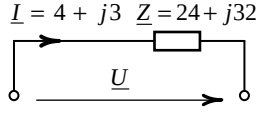
Вариант 21

№	Дано	Опр.
1	$u = 40\sqrt{2}\sin\left(\omega t - 45^{\circ}\right)$	$\underline{U}, U$
2	$\underline{I} = -4\sqrt{3} + j4$	i, I
3	$\underline{U}_m = 200\sqrt{2}\lfloor -120^{\circ}$	u, U
4	$\underline{I} = j16\sqrt{2}$	i, I_m
5	$\underline{U}_m = (6 + j8)(4 + j3)$	u
6	$\underline{Z} = 30 + j40$	$Z, \underline{Y}$
7		$\underline{Z}, Z$
8		$\underline{Z}, Z$

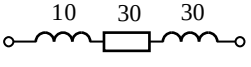
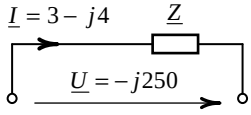
Вариант 22

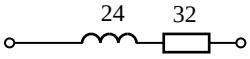
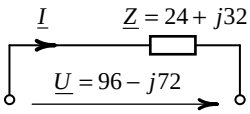
№	Дано	Опр.
1	$i = 3\sqrt{2}\sin\left(\omega t + 30^{\circ}\right)$	$\underline{I}, I_m$
2	$\underline{U} = 20 - j15$	u, U
3	$\underline{I}_m = 12\sqrt{2}\lfloor -90^{\circ}$	i, I_m
4	$\underline{U} = j45$	u, U_m
5	$\underline{I}_m = (5 - j5\sqrt{3})3\lfloor -60^{\circ}$	i
6	$\underline{Z} = 24 + j32$	$Z, \underline{Y}$
7		$\underline{Z}, Z$
8		$\underline{I}, I$

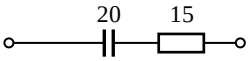
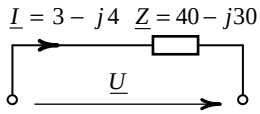
Вариант 23

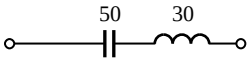
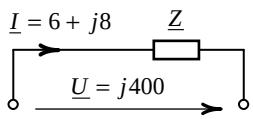
№	Дано	Опр.
1	$i = 2\sqrt{2}\sin\left(\omega t - 20^{\circ}\right)$	$\underline{I}, I$
2	$\underline{U} = 40 - j30$	u, U
3	$\underline{I} = -2\sqrt{2}\lfloor 150^{\circ}$	i, I_m
4	$\underline{U}_m = 45\sqrt{2}$	u, U_m
5	$\underline{I} = (-2 + j2)6\lfloor -60^{\circ}$	i
6	$\underline{Z} = 15 - j20$	$Z, \underline{Y}$
7		$\underline{Z}, Z$
8		$\underline{U}, U$

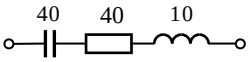
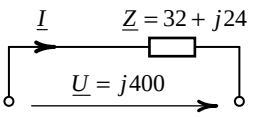
Вариант 24

№	Дано	Опр.
1	$u = 24\sqrt{2}\sin\left(\omega t + 180^{\circ}\right)$	$\underline{U}, U_m$
2	$\underline{I}_m = 3 + j3$	i, I
3	$\underline{U} = 45\sqrt{2}\lfloor -135^{\circ}$	u, U_m
4	$\underline{I} = -15\sqrt{2}$	i, I
5	$\underline{U}_m = (-3 + j4)(16 + j12)$	u
6	$\underline{Z} = 60 + j80$	$Z, \underline{Y}$
7		$\underline{Z}, Z$
8		$\underline{Z}, Z$

Вариант 25		
№	Дано	Опр.
1	$u = 36\sqrt{2}\sin\left(\omega t - 15^{\circ}\right)$	$\underline{U}, U$
2	$\underline{I} = 5\sqrt{3} + j5$	i, I
3	$\underline{U}_m = -25\sqrt{2}\angle 30^{\circ}$	u, U
4	$\underline{I} = j25$	i, I_m
5	$\underline{U}_m = (-6 + j8)(-4 + j3)$	u
6	$\underline{Z} = 4 + j3$	$Z, \underline{Y}$
7		$\underline{Z}, Z$
8		$\underline{I}, I$

Вариант 26		
№	Дано	Опр.
1	$i = 4\sqrt{2}\sin\left(\omega t + 120^{\circ}\right)$	$\underline{I}, I_m$
2	$\underline{U}_m = -200 + j200$	u, U
3	$\underline{I} = 12\sqrt{2}\angle -180^{\circ}$	i, I_m
4	$\underline{U} = -j30\sqrt{2}$	u, U_m
5	$\underline{I}_m = (1 + j\sqrt{3})5\angle 30^{\circ}$	i
6	$\underline{Z} = 6 + j8$	$Z, \underline{Y}$
7		$\underline{Z}, Z$
8		$\underline{U}, U$

Вариант 27		
№	Дано	Опр.
1	$i = 2\sqrt{2}\sin\left(\omega t + 30^{\circ}\right)$	$\underline{I}, I$
2	$\underline{U} = 24 - j32$	u, U
3	$\underline{I} = -15\angle -60^{\circ}$	i, I
4	$\underline{U} = 220\sqrt{2}$	u, U_m
5	$\underline{I}_m = (3 - j3\sqrt{3})5\angle 120^{\circ}$	i
6	$\underline{Z} = 32 - j24$	$Z, \underline{Y}$
7		$\underline{Z}, Z$
8		$\underline{Z}, Z$

Вариант 28		
№	Дано	Опр.
1	$u = 50\sqrt{2}\sin\left(\omega t - 90^{\circ}\right)$	$\underline{U}, U_m$
2	$\underline{I} = -4 + j4\sqrt{3}$	i, I
3	$\underline{U} = -100\angle 25^{\circ}$	u, U
4	$\underline{I}_m = -12\sqrt{2}$	i, I
5	$\underline{U}_m = (3 - j4)(8 - j6)$	u
6	$\underline{Z} = 15 + j20$	$Z, \underline{Y}$
7		$\underline{Z}, Z$
8		$\underline{I}, I$