

$$Z_C = \frac{1}{j2\pi fC} = \frac{1}{j2\pi(10)20} = 0$$

$$Z_{C_{20}} = \frac{1}{j2\pi(10)(20 \times 10^{-6})} = -795,7747j \, \Omega$$

$$V_0 = 10 \cdot \frac{-j795,7747}{100 - j795,7747} = 7,8445 - 1,2371j$$

$$= 9,92197 \angle -7,1624^\circ \, V$$

$$V_0 = 9,92197 / \sqrt{2} = 7,02 \, V$$

$$I = \frac{10}{100 - j795,7747} = 8,81 \times 10^{-3} \angle 82,837^\circ \, A$$

Para 50 H

$$Z_{L20} = \frac{1}{j2\pi(50)(20 \times 10^{-6})} = -159,1549j \, \Omega$$

$$V_0 = 8,4673 / \sqrt{2} = 5,9873 \, V$$

$$V_0 = 10 \cdot \frac{-j159,1549}{100 - j159,1549} = 8,4673 \angle -32,1419^\circ$$

$$I = \frac{10}{100 - j159,1549} = 37,62 \times 10^{-3} \angle 57,858^\circ \, A$$

Para 100 H

$$Z_{C20} = \frac{1}{j 2\pi (100)(20 \times 10^{-6})} = -79,5775 j \Omega$$

$$V_o = 10 \cdot \frac{-j 79,5775}{100 - j 79,5775} = 6,22 \angle -141,488^\circ \text{ V}$$

$$V_v = 6,22 / \sqrt{2} = 4,398 \text{ V}$$

$$I = \frac{10}{\sqrt{2}} \cdot \frac{100 - j 79,5775}{100 - j 79,5775} = 55,329 \times 10^{-3} \angle 38,51^\circ \text{ A}$$

Para 500 H

$$Z_{C20} = \frac{1}{j 2\pi (500)(20 \times 10^{-6})} = -15,9155 j \Omega$$

$$V_o = 10 \cdot \frac{-j 15,9155}{100 - j 15,9155} = 1,5717 \angle -80,96^\circ \text{ V}$$

$$V_v = 1,5717 / \sqrt{2} = 1,111 \text{ V}$$

$$I = \frac{10}{\sqrt{2}} \cdot \frac{100 - j 15,9155}{100 - j 15,9155} = 69,83 \times 10^{-3} \angle 9,04^\circ \text{ A}$$

Para 1000 H

$$Z_{C20} = \frac{1}{j 2\pi (1000)(20 \times 10^{-6})} = -7,9577 j \Omega$$

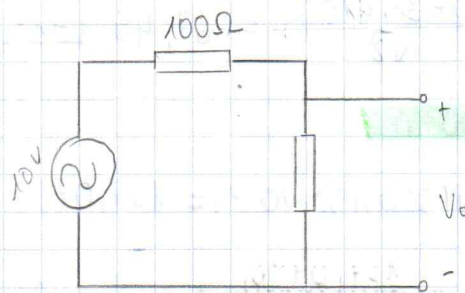
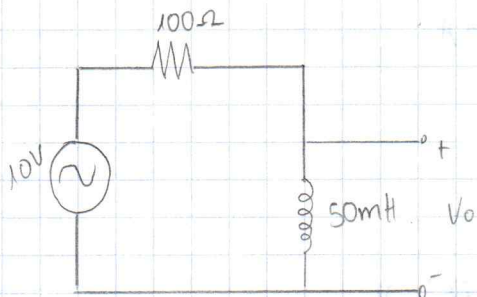
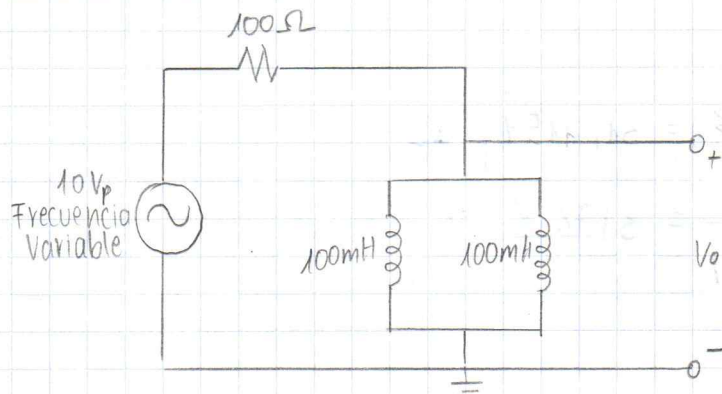
$$V_o = 10 \cdot \frac{-j 7,9577}{100 - j 7,9577} = 0,7933 \angle -85,45^\circ \text{ V}$$

$$V_v = 0,7933 / \sqrt{2} = 0,5609 \text{ V}$$

$$I = \frac{10}{\sqrt{2}} \cdot \frac{100 - j 7,9577}{100 - j 7,9577} = 70,487 \times 10^{-3} \angle 4,54^\circ \text{ A}$$

"Tú debes ser el cambio que deseas ver en el mundo".

Mabulima Gumbi



$$Z_L = j2\pi(0)(50 \times 10^{-6}) = 0 ; V_0 = 0 ; V_L = 0 ; I = 0$$

Para 10 H

$$Z_L = j2\pi(10)(50 \times 10^{-3}) = 3,1416 j \Omega$$

$$V_0 = 10 \cdot \frac{3,1416 j}{100 + 3,1416 j} = 314188,2 \text{ mV}$$

$$V_L = 314188,2 / \sqrt{2} = 222 \text{ mV}$$

$$I = \frac{10}{\sqrt{100 + 3,1416^2}} = 70,671 - 1,79 \text{ mA}$$

Para 50 H

$$Z_L = j2\pi(50)(50 \times 10^{-3}) = 15,7079 j \Omega$$

$$V_0 = 10 \cdot \frac{15,7079 j}{100 + 15,7079 j} = 1,571 - 8,63 \text{ V}$$

$$V_L = 1,571 \sqrt{2} = 1,11 \text{ V}$$

$$I = \frac{10}{\sqrt{100 + 15,7079^2}} = 69,851 - 8,93 \text{ mA}$$

Para 100 H

$$Z_L = j 2\pi(100)(50 \times 10^{-3}) = 31,4159j \Omega$$

$$V_o = 10 \cdot \frac{31,4159j}{100 + 31,4159j} = 3172,5^\circ \text{ V}$$

$$V_o = 31\sqrt{2} = 2,12 \text{ V}$$

$$I = \frac{10}{100 + 31,4159j} = 67,45 \angle -17,4^\circ \text{ mA}$$

Para 500 H

$$Z_L = j 2\pi(500)(50 \times 10^{-3}) = 157,0796j$$

$$V_o = 10 \cdot \frac{157,0796j}{100 + 157,0796j} = 8,4356 \angle 32,48^\circ \text{ V}$$

$$V_o = 8,4356 / \sqrt{2} = 5,9649 \text{ V}$$

$$I = \frac{10}{100 + 157,0796j} = 37,97 \angle -57,52^\circ \text{ mA}$$

Para 1000 H

$$Z_L = j 2\pi(1000)(50 \times 10^{-3}) = 314,159j \Omega$$

$$V_o = 10 \cdot \frac{314,159j}{100 + 314,159j} = 9,53 \angle 17,66^\circ \text{ V}$$

$$V_o = 9,53 / \sqrt{2} = 6,738 \text{ V}$$

$$I = \frac{10}{100 + 314,159j} = 21,45 \angle -72,3^\circ \text{ mA}$$