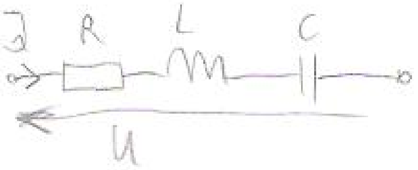

$$\omega = 2\pi f$$

$$Z = \left(R + \omega \cdot L + \frac{1}{\omega C}\right)$$

$$U = Z \cdot J$$

$$Z = \left(R + 2\pi f L + \frac{1}{2\pi f C}\right)$$

$$J = \frac{U}{Z}$$

$$\left(f(x) \cdot g(x)\right)' = f'(x) \cdot g(x) + f(x) \cdot g'(x)$$

$$J = U \cdot \frac{1}{R + 2\pi f L + \frac{1}{2\pi f C}}$$

$$g(f(x)) = g'(f(x)) \cdot f'(x)$$

$$\frac{dJ(f)}{df} = -1 \cdot U \cdot \frac{1}{\left(R + 2\pi f L + \frac{1}{2\pi f C}\right)^2} \left(2\pi L - 1 \frac{1}{(2\pi f C)^2} \cdot (2\pi C)\right)$$

$$\frac{dJ(f)}{df} = \frac{-U \cdot \left(2\pi L - \frac{2\pi C}{(2\pi f C)^2}\right)}{\left(R + 2\pi f L + \frac{1}{2\pi f C}\right)^2}$$

$$\frac{dJ(f)}{df} = \frac{-U \cdot 2\pi L + U \cdot \frac{2\pi C}{(2\pi f C)^2}}{\left(R + 2\pi f L + \frac{1}{2\pi f C}\right)^2}$$

$$\frac{dJ(f)}{df} = \frac{-U \cdot 2\pi L}{\left(R + 2\pi f L + \frac{1}{2\pi f C}\right)^2} + \frac{U \cdot \frac{2\pi C}{(2\pi f C)^2}}{\left(R + 2\pi f L + \frac{1}{2\pi f C}\right)^2}$$

$$0 = \frac{-U \cdot 2\pi L}{\left(R + 2\pi f L + \frac{1}{2\pi f C}\right)^2} + \frac{U \cdot \frac{2\pi C}{(2\pi f C)^2}}{\left(R + 2\pi f L + \frac{1}{2\pi f C}\right)^2}$$

$$\frac{U \cdot 2\pi L}{\left(R + 2\pi f L + \frac{1}{2\pi f C}\right)^2} = \frac{U \cdot \frac{2\pi C}{(2\pi f C)^2}}{\left(R + 2\pi f L + \frac{1}{2\pi f C}\right)^2} \quad / \cdot \left(R + 2\pi f L + \frac{1}{2\pi f C}\right)^2 \quad / : U$$

$$2\pi L = \frac{2\pi C}{(2\pi f C)^2}$$

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$$2\pi L = \frac{2\pi C}{(2\pi f C)^2}$$

$$2\pi L = \frac{2\pi \cancel{C}}{4\pi^{\cancel{2}} \cdot f^2 \cdot C^{\cancel{2}}}$$

$$2\pi L = \frac{1}{2\pi f^2 \cdot C} \quad / \cdot C$$

$$2\pi L C = \frac{1}{2\pi f^2}$$

$$2\pi L C \cdot 2\pi f^2 = 1$$

$$4\pi^2 L C \cdot f^2 = 1$$

$$f^2 = \frac{1}{4\pi^2 L C}$$

$$f = \sqrt{\frac{1}{4\pi^2 \cdot L C}}$$

$$f = \frac{\sqrt{1}}{\sqrt{4\pi^2 L C}}$$

$$\boxed{f = \frac{1}{2\pi \sqrt{LC}}}$$

$$\frac{1}{1+2A+\frac{1}{2x}}$$