

Re: Tanks, impedance, the j operator and excel

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On Sun, 25 May 2008 20:58:28 -0500, "Bob" <nobody@xxxxxxxx> wrote:

Hi gang,

This one is directed at you math whizzes..... I have a formula for tank circuit impedance that I am attempting to analyze/plot in MS Excel. The tank consists of a resistor in series with the coil, a cap in parallel with the coil resistor combination and a another resistor in parallel with the cap and coil/resistor.

The formula consists of two quotients; One has a numerator that consists of several terms multiplied, added, squared, etc and the denominator is similar. The second quotient is preceded by the "j" operator. (That is the entire quotient appears to be "j"ed rather than any single term or factor). This quotient has a numerator and denominator similar to the first).

I assume that the first quotient is the real part of the impedance, while the second one is the imaginary part, yielding the rectangular $Z = R +/- j$ form. Does this sound correct?

Assuming the math is done correctly, I believe I can use the IMABS function on the result to get the magnitude of the impedance. Yes?

In Excel, I have entered the first quotient as ordinary numbers, i.e. " $=A1*(C2+B3).../D4*6.28*C3.....$ ".

I'm getting numbers that seem to make sense.

The second quotient has me scratching my head a bit. I have tried using the same process on this part, and then using " $=IMABS(\text{first quotient results}, \text{second quotient results})$ " to get the magnitude of the impedance but I think this may be incorrect.

Any thoughts? If someone wants it, I can post my Excel file to them.....

According to my Excel help, the syntax for the function is
 $=IMABS("5+12i")$

that is, the quotes go around the argument of the function, and there is a plus sign, not a comma, linking the real and imaginary parts.

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John

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