

In Razavi's book <RF microelectronics>(second edition), it says " For a sinusoidal input voltage with an rms value of  $V_{in}$ , the power delivered to the input port is equal to  $V_{in}^2/\text{Re}[Z_{in}]$ "

My question is : if the input impedance of the port is  $Z_{in}=A+jB$ ,  $\text{Re}[Z_{in}]=A$ ,

then the power delivered to the input port is  $\frac{V_{in}^2}{A+jB} = \frac{AV_{in}^2}{A^2+B^2} - j\frac{BV_{in}^2}{A^2+B^2}$ ,

since inductors and capacitors does not consume power, the power

delivered to the input port is  $\frac{AV_{in}^2}{A^2+B^2}$ .

But as in the Razavi's book, the power delivered to the input port is

$$\frac{V_{in}^2}{\text{Re}[Z_{in}]} = \frac{V_{in}^2}{A}$$

Which one is correct?