c. $\omega >> \omega_0$, & $\omega >> \frac{R}{L}$

$$K(\omega) = \frac{1}{(\frac{1}{C} - m\omega^2) + i R\omega} \qquad Z(\omega) = \frac{1}{i\omega} K(\omega)$$

b.

$$\omega = \omega_0 = \sqrt{\frac{1}{LC}} \qquad Z = \frac{1}{i\sqrt{\frac{1}{LC}}} \frac{1}{(\frac{1}{C} - m(\frac{1}{LC})) + iR\sqrt{\frac{1}{LC}}}$$

$$K\left(\sqrt{\frac{1}{LC}}\right) = \frac{1}{(1 - LC) + iR\sqrt{\frac{1}{LC}}}$$