$$= |H(jw_c)| \cos(w_c t + \phi(w_c))\, m(t + \phi'(w_c))$$

Define $\tau_g(w_c) = -\phi'(w)\big|_{w=w_c}$

$$\tau_p(w_c) = -\frac{\phi(w_c)}{w_c}$$

$$y(t) = |H(jw_c)| \cos(w_c(t - \tau_p(w_c)))\, m(t - \tau_g(w_c))$$