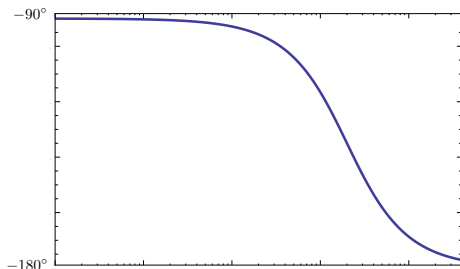


## Example 2

$$G(j\omega) = \frac{\omega_n^2}{(j\omega)^2 + 2\zeta\omega_n j\omega} = \frac{\omega_n}{2\zeta j\omega \left( \frac{j\omega}{2\zeta\omega_n} + 1 \right)}$$

Let's look at the phase plot:

- ▶ starts at  $-90^\circ$  (Type 1 term with  $n = -1$ )
- ▶ goes down by  $-90^\circ$  (Type 2 pole)



Recall: to find GM, we first need to find  $\omega_{180^\circ}$ , and here there is no such  $\omega \implies$  no GM.