In each case below, find a transfer function that behaves as described, then use MATLAB to construct the Bode plots of your transfer function to verify that it is indeed as described

1. A low-pass filter, with bandwidth $0 \leq \omega \leq 100$ and acting as an amplifier for $0 \leq \omega \leq 1000$
2. A high-pass filter, with bandwidth $10 \leq \omega \leq \infty$ and acting as an amplifier for $0.5 \leq \omega \leq \infty$
3. A bandpass filter with BW $= 10 \leq \omega \leq 100$, acting as an amplifier in the range $10 \leq \omega \leq 100$
4. A notch filter, with the filtered frequencies $1 \leq \omega \leq 10$.