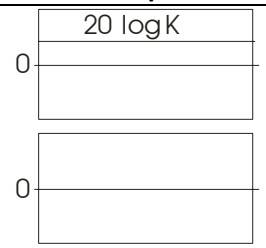
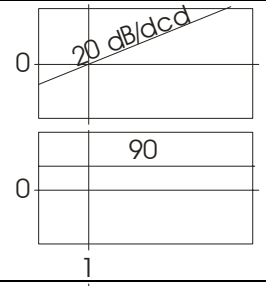
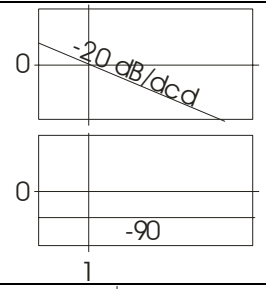
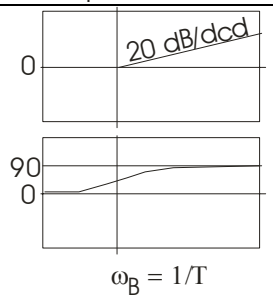
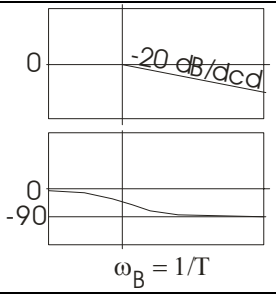
Component	Bode plot	Characteristics
Gain, *K*		If K > 1, 20 log K > 0 If K < 1, 20 log K < 0 Gain has zero phase. So when it is added to a system, it simply shifts the system's log mag curve up (K>1) or down (K<1).
Differentiator, *s*		Has a constant slope upward of 20 dB/dcd With s = jω and ω = 1, M = 1, so 20 log M = 0. So differentiator crosses ω axis of log mag plot at ω = 1. Can recognize system with s in it because no matter how small ω is, log mag plot still has upward slope and ϕ starts at 90 degrees.
Integrator, $\frac{1}{s}$		Has a constant slope downward of -20 dB/dcd With s = jω and ω = 1, M = 1, so 20 log M = 0. So integrator crosses ω axis of log mag plot at ω = 1. Can recognize system with 1/s in it because no matter how small ω is, log mag plot still has downward slope and ϕ starts at -90 degrees.
1st-order lead, *Ts*+1		Starts out with 0 log mag. Asymptote starts a 20 dB/dcd rise at break frequency (1/T). Actual curve is about 3 dB above low-frequency asymptote at break frequency. Phase curve starts at 0 and rises to 90 degrees. It is at 45 degrees at break frequency.
1st-order lag, $\frac{1}{Ts+1}$		Starts out with 0 log mag. Asymptote starts a -20 dB/dcd fall at break frequency (1/T). Actual curve is about 3 dB below low-frequency asymptote at break frequency. Phase curve starts at 0 and falls to -90 degrees. It is at -45 degrees at break frequency.

Table 8.1 – Bode plots of common components (part 1)

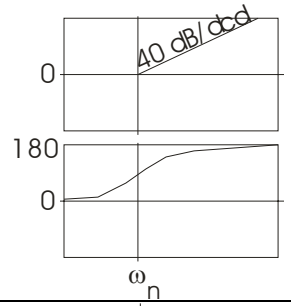
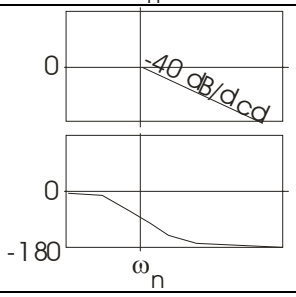
Component	Bode plot	Characteristics
2nd-order lead, $\frac{1}{\omega_n^2}s^2 + \frac{2\zeta}{\omega_n}s + 1$		Starts out with 0 log mag. Asymptote starts a 40 dB/dcd rise at break frequency, which is the natural frequency. Behavior right around break frequency depends on ζ. Phase curve starts at 0 and rises to 180 degrees. It is at 90 degrees at break frequency.
2nd-order lag, $\frac{1}{\frac{1}{\omega_n^2}s^2+\frac{2\zeta}{\omega_n}s+1}$		Starts out with 0 log mag. Asymptote starts a -40 dB/dcd fall at break frequency, which is the natural frequency. Behavior right around break frequency depends on ζ. Phase curve starts at 0 and falls to -180 degrees. It is at -90 degrees at break frequency.

Table 8.1 – Bode plots of common components (part 2)