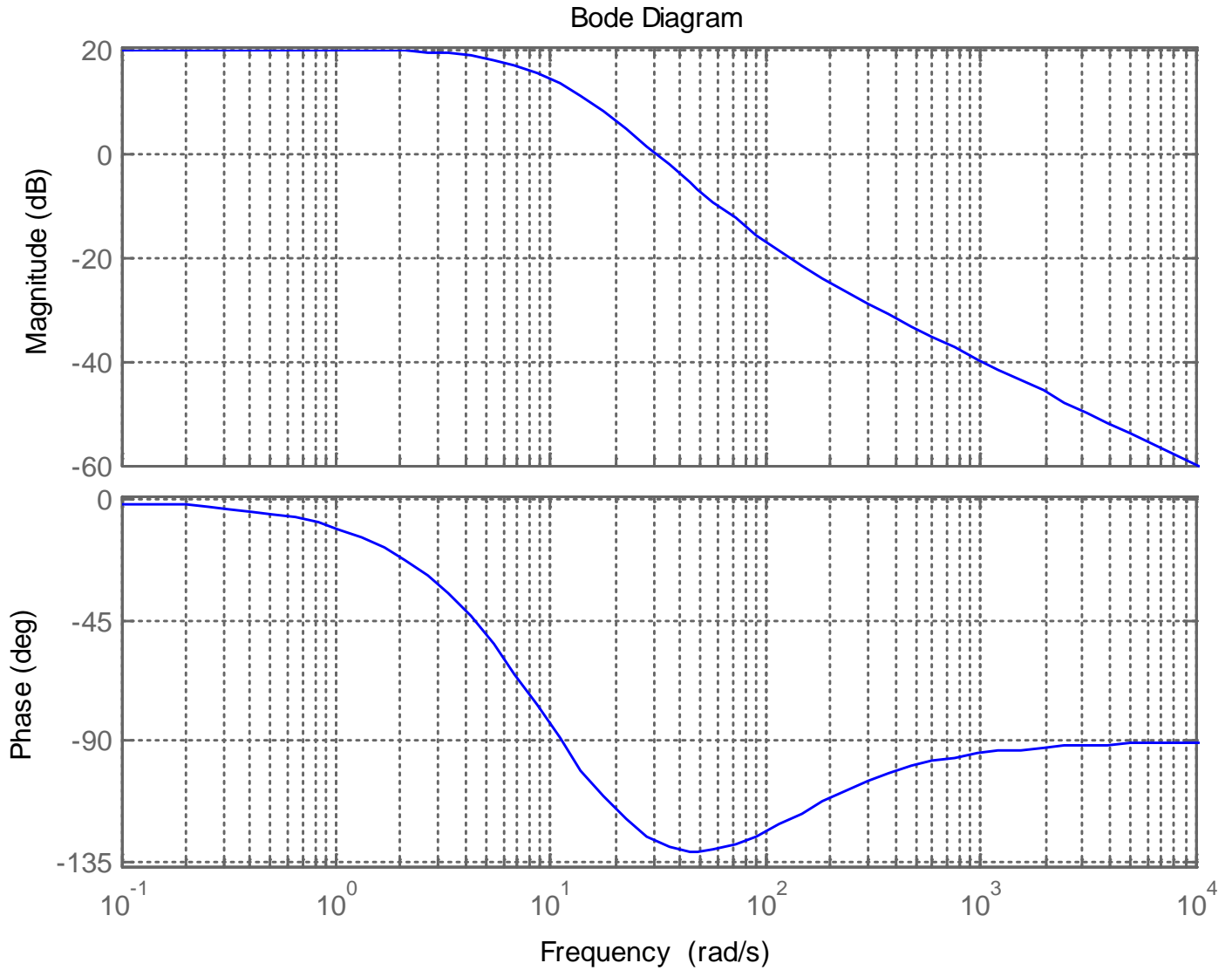


### ECE-320 Quiz 8

Problems 1 and 2 refer to the following open loop Bode plot of  $G(s)H(s)$

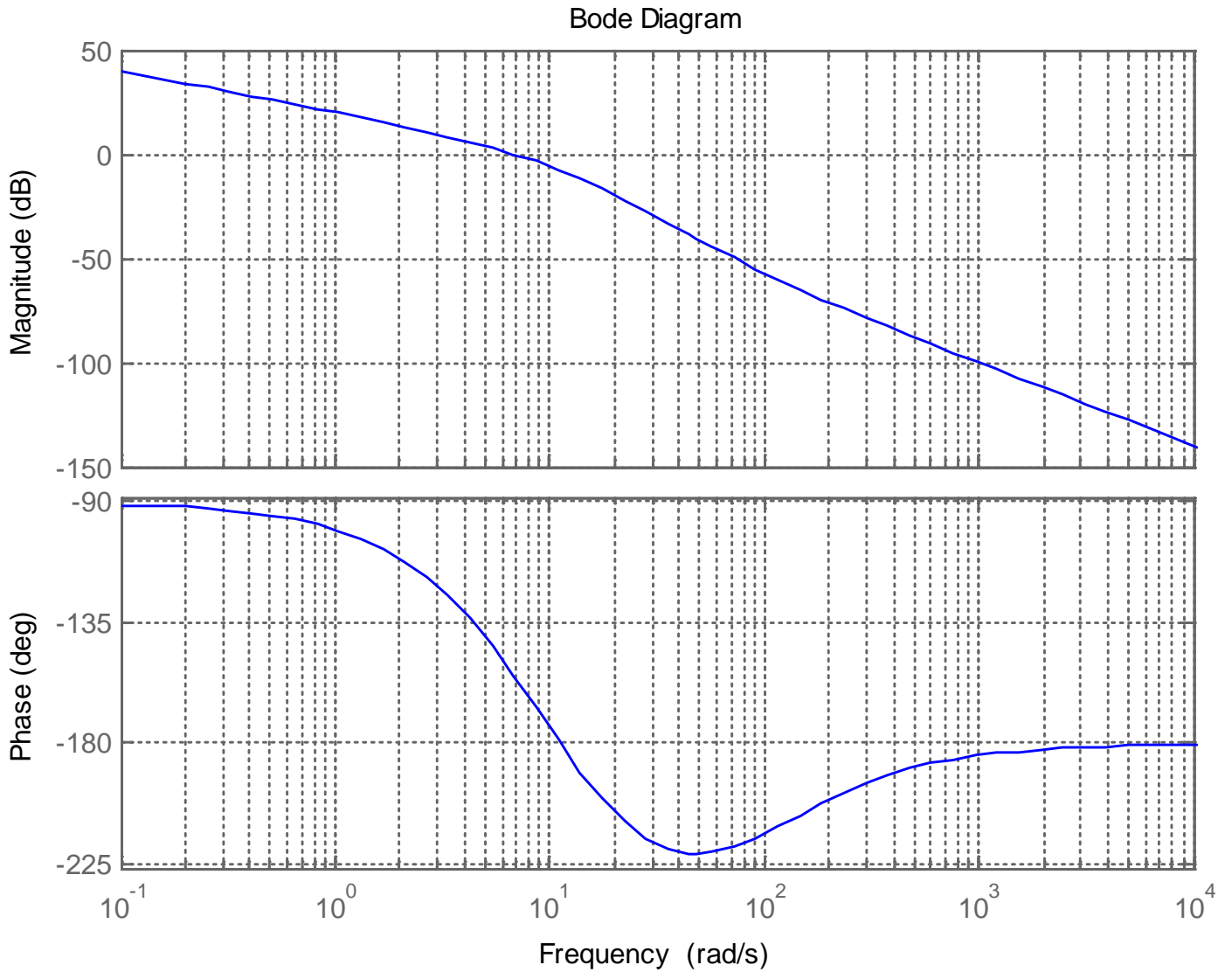


1) The *gain crossover frequency* used to determine the *phase margin* for this system is best estimated as

- a) 0.1 rad/sec   b) 13 rad/sec   c) 30 rad/sec   d) 100 rad/sec   e) 300 rad/sec

2) The *phase margin* for this system is best estimated as   a)  $+55^\circ$    b)  $-55^\circ$    c)  $+90^\circ$    d)  $-90^\circ$

Problems 3-6 refer to the following open loop Bode plot of  $G(s)H(s)$



3) The *gain crossover frequency* used to determine the *phase margin* for this system is best estimated as

- a) 0 rad/sec   b) 1 rad/sec   c) 6 rad/sec   d) 10 rad/sec   e) 60 rad/sec

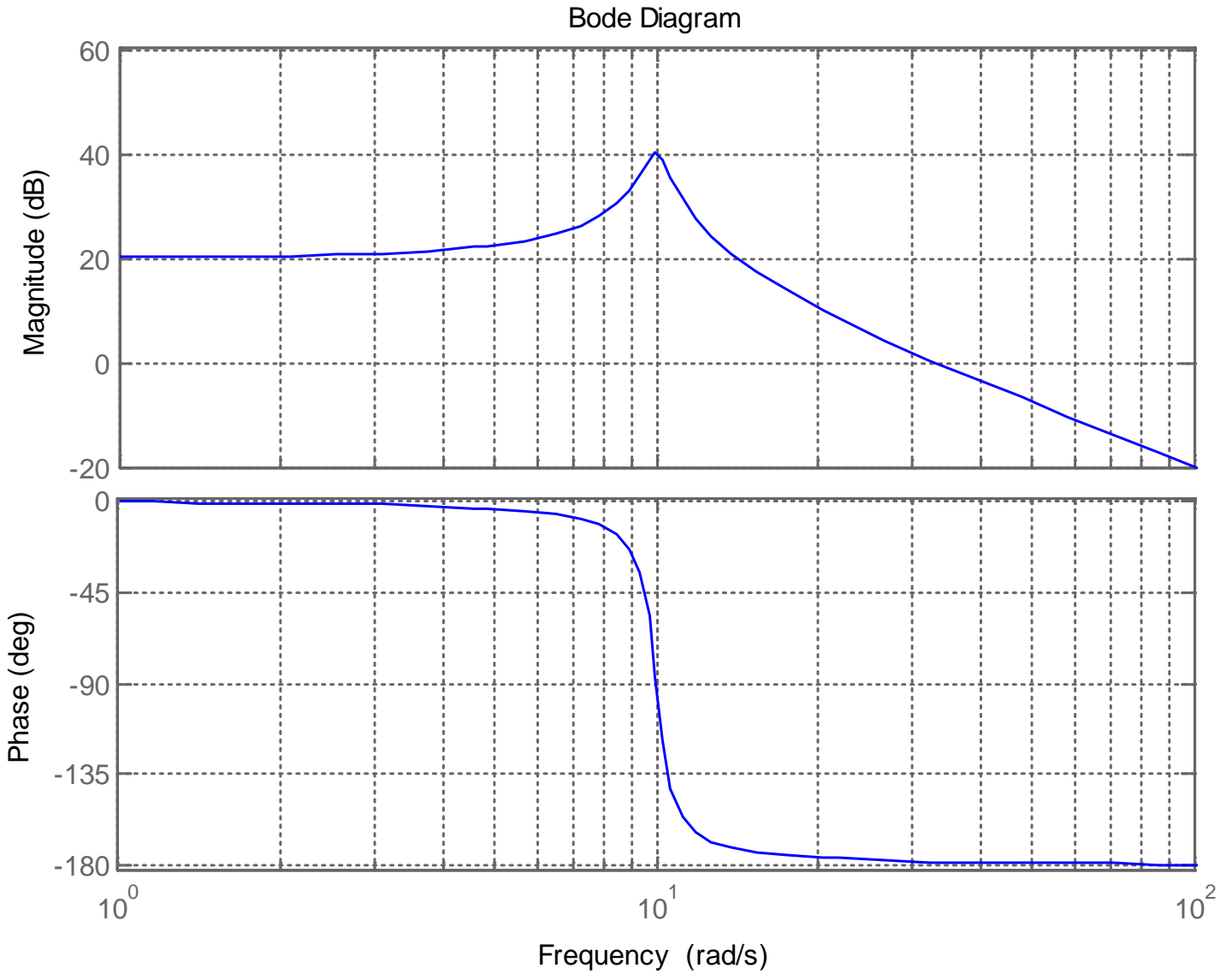
4) The *phase crossover frequency* for this system is best estimated as

- a) 0 rad/sec   b) 1 rad/sec   c) 6 rad/sec   d) 10 rad/sec   e) 60 rad/sec

5) The *phase margin* for this system is best estimated as   a)  $+25^\circ$    b)  $-25^\circ$    c)  $+45^\circ$    d)  $-45^\circ$

6) The *gain margin* for this system is best estimated as   a) +8 dB   b) - 8 dB   c)  $\infty$  dB   d) 0 dB

Problems 7-10 refer to the following open loop Bode plot of  $G(s)H(s)$



7) The *gain crossover frequency* used to determine the *phase margin* for this system is best estimated as

- a) 0 rad/sec   b) 10 rad/sec   c) 13 rad/sec   d) 32 rad/sec

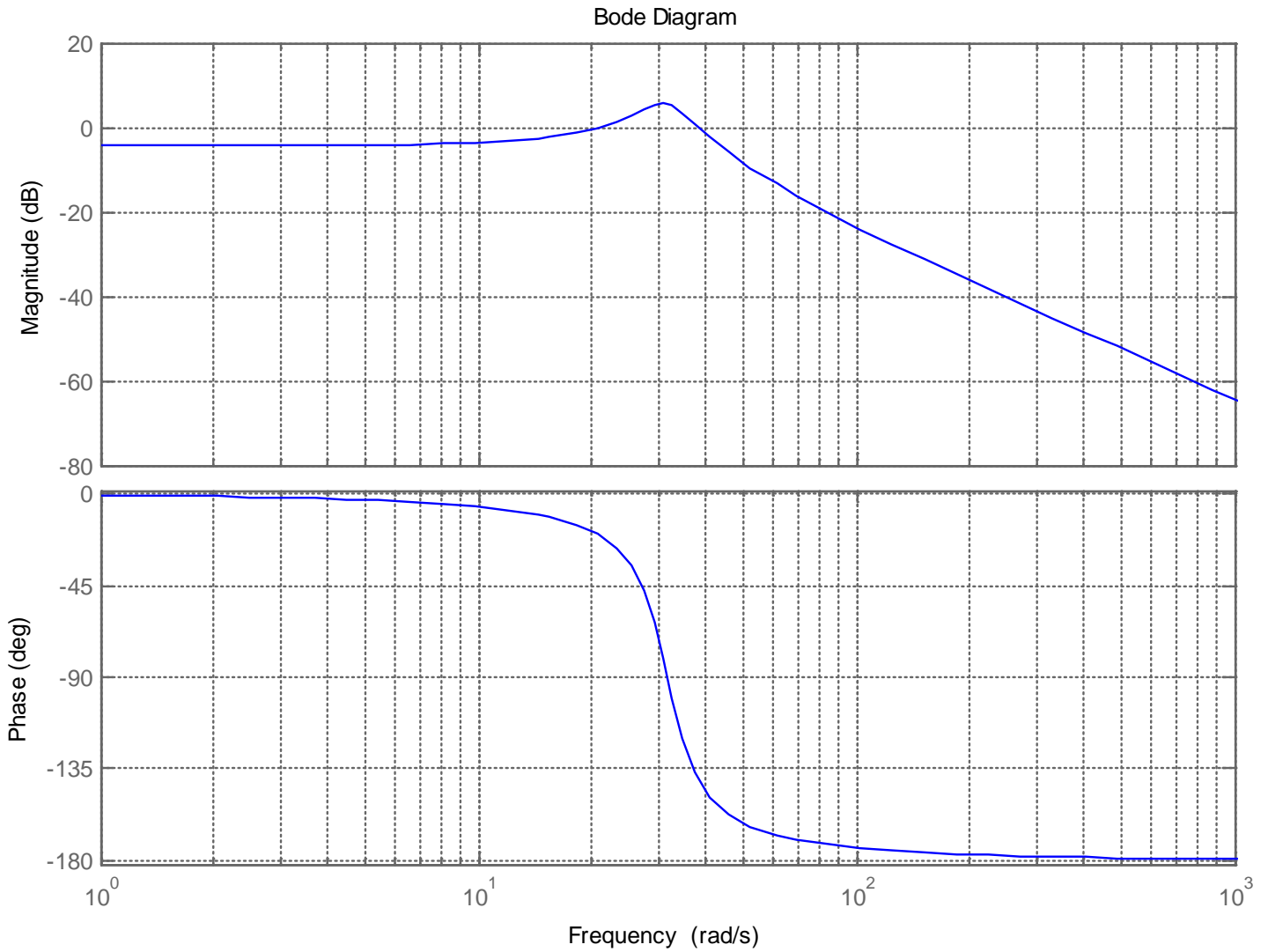
8) The *phase crossover frequency* for this system is best estimated as

- a) 0 rad/sec   b) 1 rad/sec   c) 10 rad/sec   d) 20 rad/sec   e) none of these

9) The *phase margin* for this system is best estimated as   a)  $+2^\circ$    b)  $-2^\circ$    c)  $+90^\circ$    d)  $-90^\circ$

10) The *gain margin* for this system is best estimated as   a) +5 dB   b) -5 dB   c)  $\infty$  dB   d) 0 dB

Problems 11 and 12 refer to the following open loop Bode plot of  $G(s)H(s)$

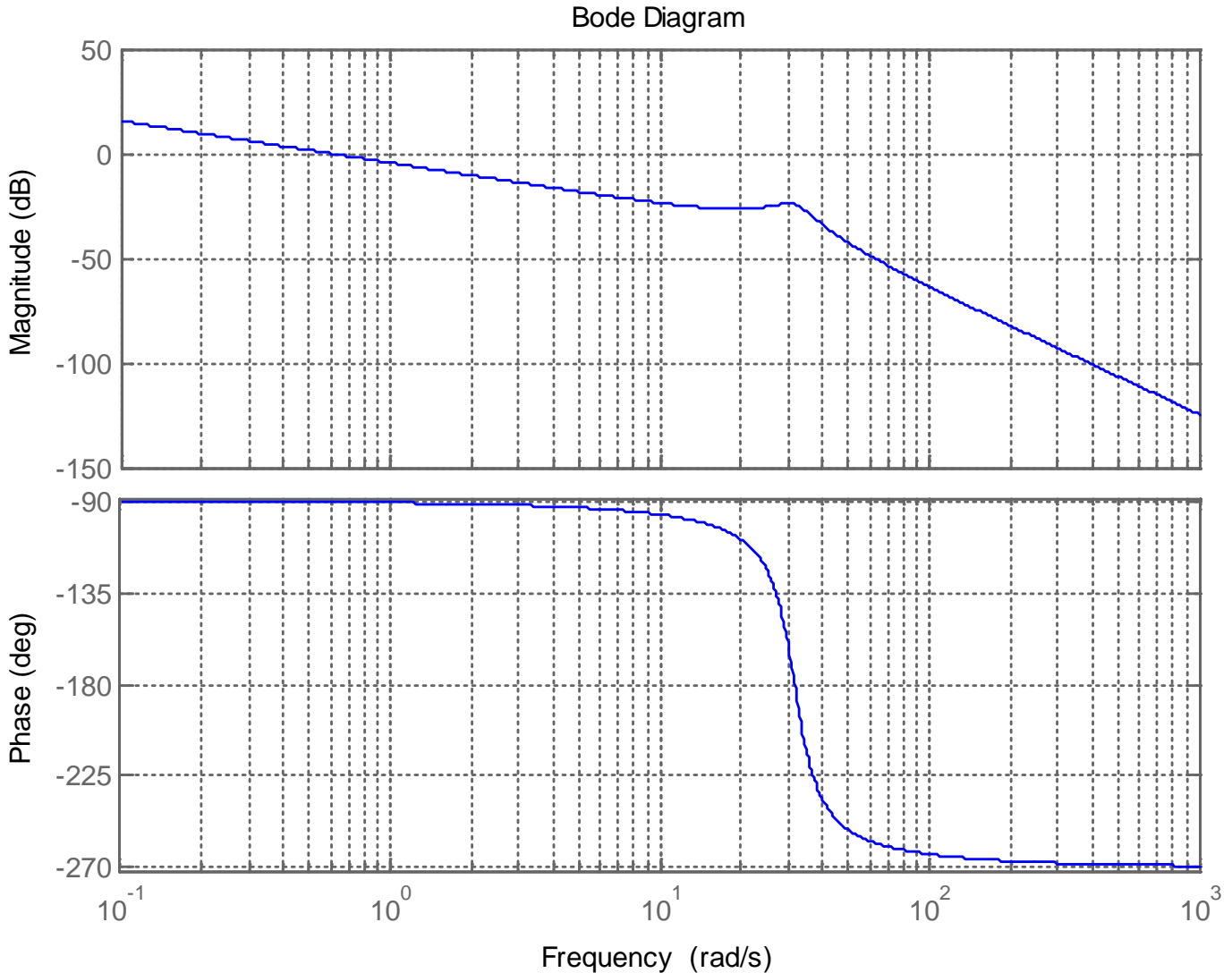


11) The *gain crossover frequency* used to determine the *phase margin* for this system is best estimated as

- a) 11 rad/sec   b) 20 rad/sec   c) 30 rad/sec   d) 40 rad/sec

12) The *phase margin* for this system is best estimated as   a)  $+150^\circ$    b)  $+120^\circ$    c)  $+40^\circ$    d)  $-150^\circ$

Problems 13-16 refer to the following open loop Bode plot of  $G(s)H(s)$



**13)** The *gain crossover frequency* used to determine the *phase margin* for this system is best estimated as

- a) 0.1 rad/sec   b) 0.6 rad/sec   c) 13 rad/sec   d) 30 rad/sec

**14)** The *phase crossover frequency* for this system is best estimated as

- a) 0 rad/sec   b) 10 rad/sec   c) 13 rad/sec   d) 30 rad/sec

**15)** The *phase margin* for this system is best estimated as   a)  $+90^\circ$    b)  $-90^\circ$    c)  $+20^\circ$    d)  $-20^\circ$

**16)** The *gain margin* for this system is best estimated as   a) +25 dB   b) -25 dB   c)  $\infty$  dB   d) 0 dB

Name \_\_\_\_\_

CM \_\_\_\_\_