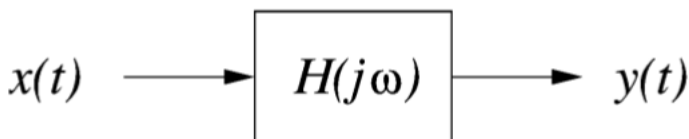
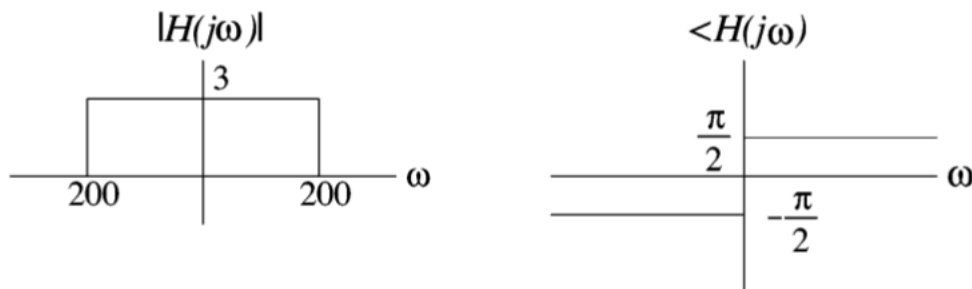


Question 6

Consider the LTI system with input $x(t)$ and output $y(t)$ shown in Fig. 3(a). The magnitude response $|H(j\omega)|$ and phase response $\angle H(j\omega)$ (in radians) of the system are shown in Fig. 3(b).



(a) System for Question 6.



(b) Magnitude and phase response of the system in Question 6.

Suppose that the input $x(t) = \cos(50t)$ for all time. What is the output $y(t)$?

- (a) $3 \cos(50t + \frac{\pi}{2})$
- (b) $\cos(50t + \frac{\pi}{2})$
- (c) $3 \cos(50t)$
- (d) $3 \cos(200t)$