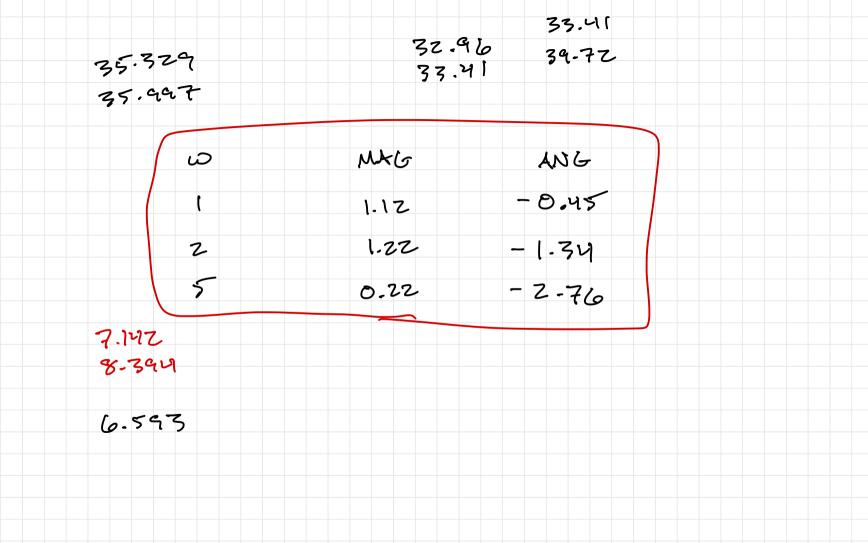
Day 32 Frequency response (platform demo)

AE353 Spring 2022 Bret1



$$\dot{x} = A \times + Bu$$
 $u = u_{des} - K(x - x_{des})$ 
 $\dot{x} = A \times + Bu$ 
 $\dot{x} = u_{des} - K(x - x_{des})$ 
 $\dot{x} = u_{des} - k(x - x_{des})$ 
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 $\dot{x} = u_{des} - k(x - x_{des})$ 

O = Axdest Budes

$$-A \times_{des} = -AMr$$

$$\dot{x} = (A - BK) \times - (A - BK) Mr$$

$$y = M^{T} \times$$

 $\dot{x}_{m} = A_{m} x_{m} + B_{m} u_{m}$   $y_{m} = C_{m} x_{m}$   $u_{m}(t) = \sin(\omega t) \implies y$ 

GENERAL RESULT

$$u_{m}(t) = \sin(\omega t)$$
  $\Rightarrow y_{m}(t) = (...) + |H(j\omega)| \sin(\omega t + \angle H(j\omega))$ 
 $u_{m}(t) = \cos(\omega t) \Rightarrow y_{m}(t) = (...) + |H(j\omega)| \cos(\omega t + \angle H(j\omega))$ 
 $a complex number$ 
 $a complex number$ 

L another complex number