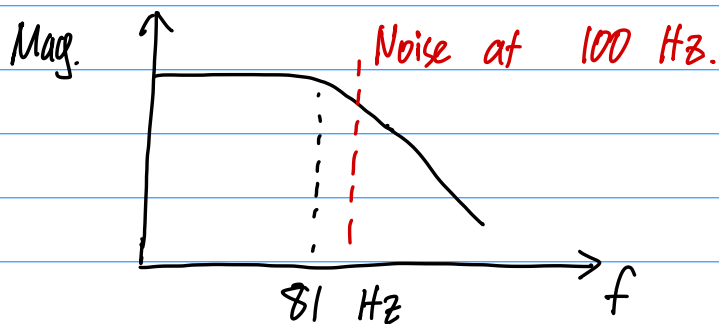(a) Pole at V_{ref} with $R = R_1 \| r_D$
$$= 1000 \| 20$$
$$= 19.6 \ \Omega.$$
$$C = 100 \ \mu F.$$

$$f_P = \frac{1}{2\pi RC} = 81 \ Hz.$$

Mag.

Noise at 100 Hz.

81 Hz

f

(b) Pole with $R = \frac{R_1}{2} \| \left(\frac{R_1}{2} + r_D \right)$
$$= 519 \ \Omega$$
$$C = 100 \ \mu F$$

$$f_P = \frac{1}{2\pi RC} = 3 \ Hz.$$

Noise at 100 Hz.

Much more attenuation.

3 Hz

f