3)

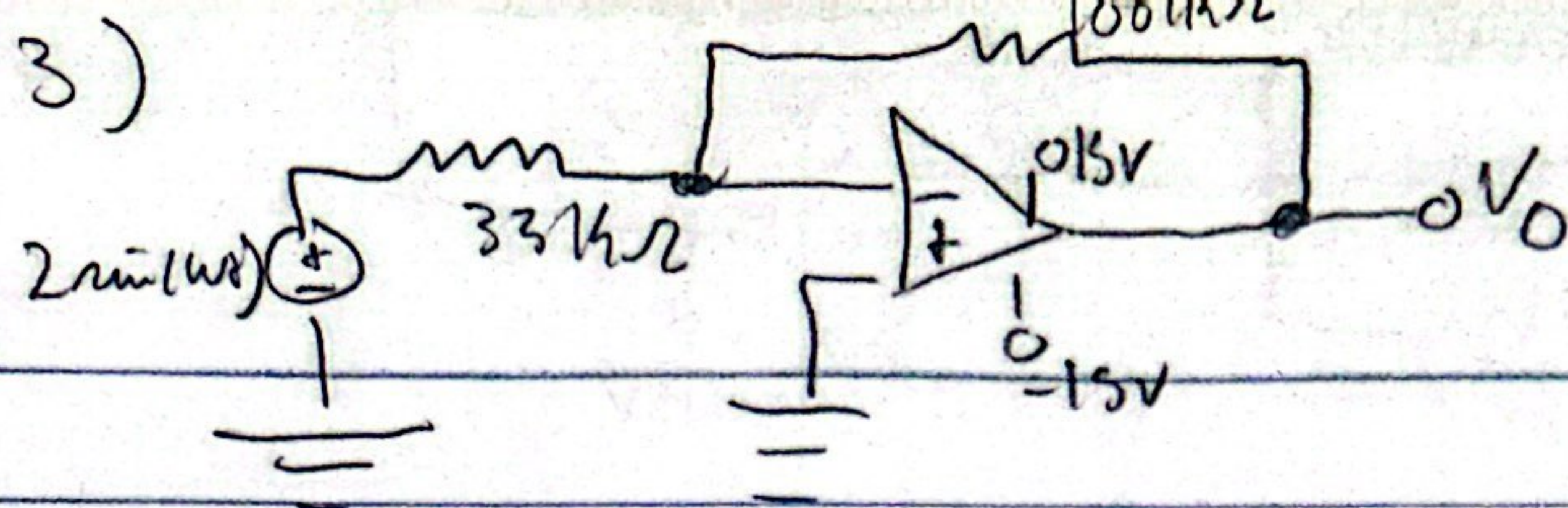$$\delta R \geq 2\pi \cdot f_{FP} \cdot V_{pk} \text{ so, } f_{FP} = \frac{SR}{2\pi V_{pk}}$$

$$GBW = A_{CL} \cdot f_{CL} \text{ so, } f_{CL} = \frac{GBW}{A_{CL}}$$

$$A_{CL} = \frac{R_f}{R_{in}} = \frac{100k\Omega}{33k\Omega} = \boxed{3.03}$$

$$f_{FP} = \frac{0.5e^6}{2\pi \cdot 6} \cong \frac{500,000}{37.7} = 13,250 Hz \cong \boxed{13.25 \text{ kHz}}$$

$$f_{CL} = \frac{GBW}{A_{CL}} = \frac{1,000,000}{3.03} \cong 330,000 Hz = \boxed{330 \text{ kHz}}$$

Scanned with CamScanner