

ERT 15

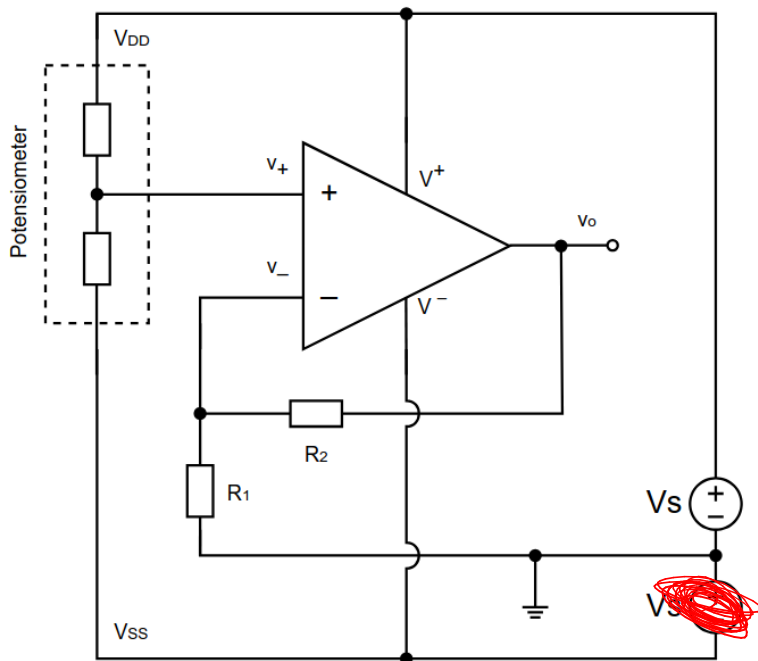
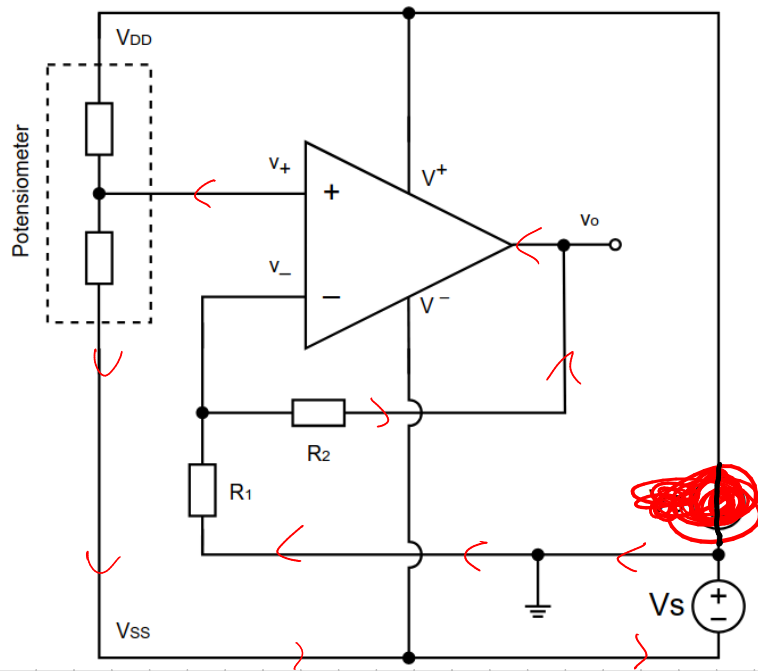
01/19 5)

$$b) \quad a = \frac{y_1 - y_2}{x_1 - x_2} = \frac{4950 - (-4950)}{2475 - (-2475)} = 2$$

$$\begin{aligned} y &= y_1 + a(x - x_1) \\ &= 4950 + 2(x - 2475) \\ &= 4950 - 4950 + 2x \\ &= 2x \end{aligned}$$

$$U_b(u_i) = \begin{cases} -5000, & u_i < -2475 \\ 2u_i, & -2475 \leq u_i \leq 2475 \\ 5000, & u_i > 2475 \end{cases}$$

0/1/2/3/4/5/6/7/8/9



0/1/8 1 0)

$$a) \underline{u_o = A(u_i - u_x)}$$

$$b) u_x = R_1 i \quad i = \frac{u_o}{R_T}$$

$$u_x = R_1 \frac{u_o}{R_T}$$

$$\underline{u_x = R_1 \frac{u_o}{R_1 + R_2}}$$

$$c) u_o = A(u_i - u_x)$$

$$= A u_i - A u_x$$

$$= A u_i - A R_1 \frac{u_o}{R_1 + R_2}$$

$$u_o + A R_1 \frac{u_o}{R_1 + R_2} = A u_i$$

$$u_o \left(1 + A R_1 \frac{1}{R_1 + R_2} \right) = A u_i$$

$$u_o = \frac{A}{1 + A R_1 \frac{1}{R_1 + R_2}} \cdot u_i$$

$$u_o = \frac{1}{\frac{1}{A} + \frac{R_1}{R_1 + R_2}} \cdot u_i$$

$$d) u_o = \frac{1}{\frac{1}{A} + \frac{R_1}{R_1 + R_2}} \cdot u_i$$

$$= \left(\frac{1}{A} + \frac{R_1}{R_1 + R_2} \right)^{-1} \cdot u_i$$

$$= \left(\frac{R_1 + R_2 + A R_1}{A(R_1 + R_2)} \right)^{-1} \cdot u_i$$

$$= \lim_{A \rightarrow \infty} \left(\frac{\frac{R_1}{A} + \frac{R_2}{A} + R_1}{R_1 + R_2} \right)^{-1} \cdot u_i$$

$$= \left(\frac{R_1}{R_1 + R_2} \right)^{-1} \cdot u_i$$

$$= \left(\frac{R_1 + R_2}{R_1} \right) \cdot U_1$$

$$= \left(1 + \frac{R_2}{R_1} \right) \cdot U_1$$

e)

