

Hoja de trabajo #1

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Determine el capacitor necesario en el circuito de la figura, para obtener una salida de 200 kHz

$$V_{cc} = 12 \text{ V}$$

$$R_1 = 10 \text{ k}\Omega$$

$$R_2 = 1.5 \text{ }\Omega$$

$$R_3 = 10 \text{ k}\Omega$$

$$V_c = \frac{V_{cc} R_3}{R_2 + R_3}$$

$$f_0 = \frac{2}{R_1 C_1} \left(\frac{V_{cc} - V_c}{V_{cc}} \right) \quad V_{cc} = \frac{(12)(10 \text{ k})}{(1.5)(10 \text{ k})}$$

$$V_{cc} = 8 \text{ V}$$

$$C_1 = \frac{2}{R_1 f_0} \left(\frac{V_{cc} - V_c}{V_{cc}} \right)$$

Limitaciones

$$R_2 = 10 \text{ k}\Omega \checkmark$$

$$0 \leq V_c \leq 12 \text{ V}$$

$$C_1 = \frac{2}{10 \text{ k} \cdot (200 \text{ k})} \left(\frac{12 - 8}{12} \right)$$

$$C_1 = 0.3333 \times 10^{-9} \text{ F}$$