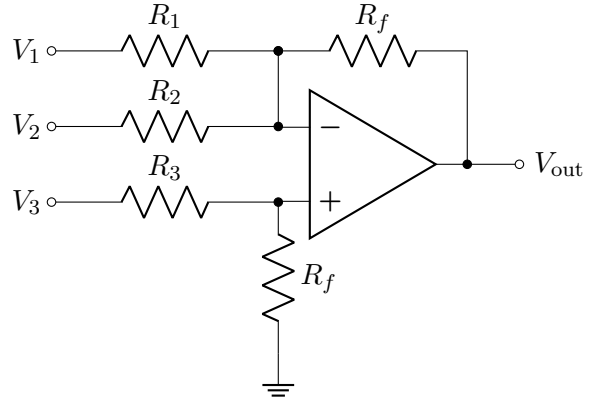
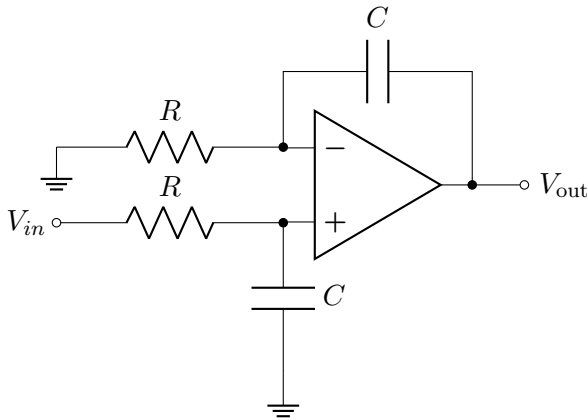


- (4) 1. Use $R_f = 1000 \Omega$ and calculate the values of R_1, R_2, R_3 such that

$$V_{out} = -(V_1 + V_2 - V_3)$$



- (5) 2.



Show that this circuit behaves as a non-inverting integrator.

- (3) 3. Prove the following Boolean equalities:

$$A + \bar{A}B = A + B, \quad AB + \bar{A}C = AB + BC + \bar{A}C, \quad AB + A\bar{B} + \bar{A}B = A + B$$

- (3) 4. Reduce to the simplest forms:

$$ABCD + A\bar{B}CD, \quad AB + \bar{A}C + A\bar{B}C(AB + C), \quad A + B(\overline{C + \overline{DE}})$$

- (3) 5. Convert the following numbers into decimal:

$$110101_2 \quad 754_8 \quad A10E_{16}$$

- (2) 6. Convert the following numbers into binary:

$$67_{10} \quad 3625_{10} \quad 635_8 \quad 8FE_{16}$$