Name:	Dr JBO
Student ID Number:	Model Answer
Section:	02A/02B/02
Lecturer:	Dr. Jamaludin Bin Omar

EEEB2014/EEEB273 - Quiz 5 .
SEMESTER 1, ACADEMIC YEAR 2019/2020
Date: 28 August 2019 Time: 15 minutes

Question:

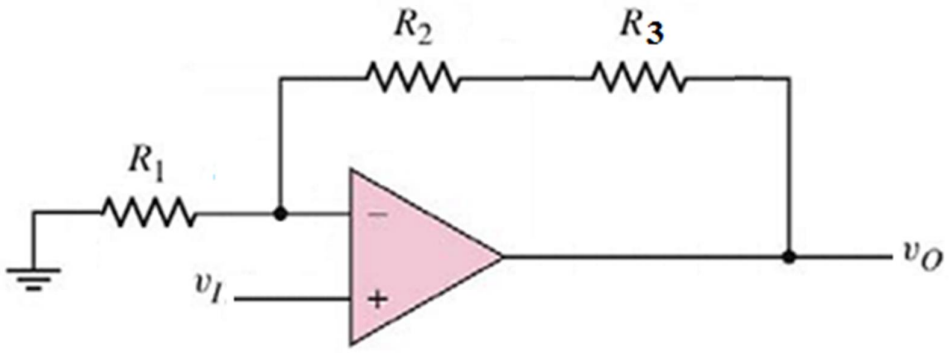

Figure 1

For an **ideal non-inverting amplifier** shown in **Figure 1**, given that R_1 = **11 kΩ** and R_2 = **24 kΩ.** **Find** the value of R_3 so that v_O = **3.6 V** when v_I = **200 mV**. **[10 marks]**
Show clearly all formula and calculations in order to get full marks.

Answer:

Av = vO / vI [2]

Av = 3.6 / 200m = 18 [2]

Av = 1 + (R2 + R3) / R1 = 1 + R2 / R1 + R3 / R1 [3]

18 = 1 + 24k / 11k + R3 / 11k [1]

R3 = 163 kq [2]

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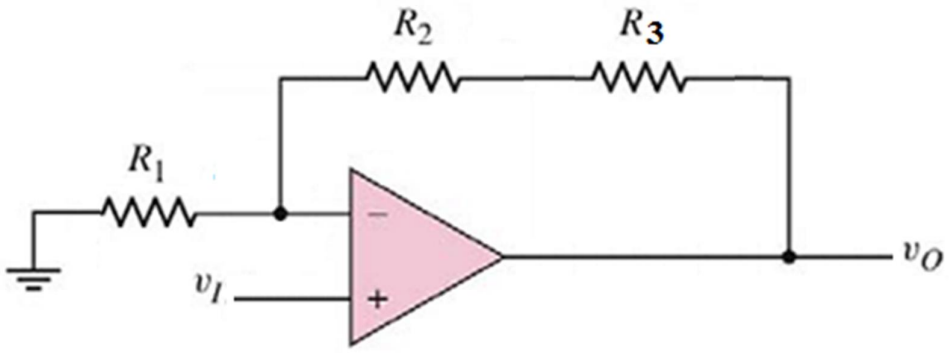

Figure 1

For an **ideal non-inverting amplifier** shown in **Figure 1**, given that R_1 = **12 kΩ** and R_2 = **20 kΩ.**
Find the value of R_3 so that v_O = **-4.2 V** when v_I = **-300 mV**. **[10 marks]**
Show clearly all formula and calculations in order to get full marks.

Answer:

Av = vO / vI [2]

Av = (-4.2) / (-300m) = 14 [2]

Av = 1 + (R2 + R3) / R1 = 1 + R2 / R1 + R3 / R1 [3]

14 = 1 + 20k / 12k + R3 / 12k [1]

R3 = 136 kq [2]

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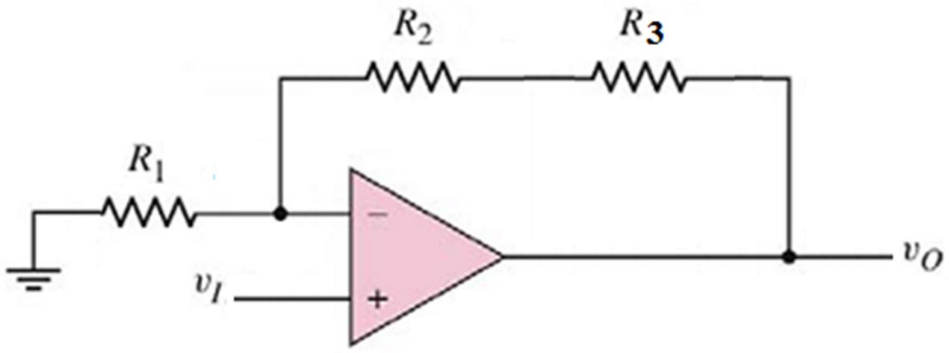

Figure 1

For an **ideal non-inverting amplifier** shown in **Figure 1**, given that R_1 = **15 kΩ** and R_2 = **20 kΩ.** **Find** the value of R_3 so that v_O = **4.5 V** when v_I = **250 mV**. **[10 marks]**
Show clearly all formula and calculations in order to get full marks.

Answer:

Av = vO / vI [2]

Av = 4.5 / 250m = 18 [2]

Av = 1 + (R2 + R3) / R1 = 1 + R2 / R1 + R3 / R1 [3]

18 = 1 + 20k / 15k + R3 / 15k [1]

R3 = 235 kq [2]

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Question:

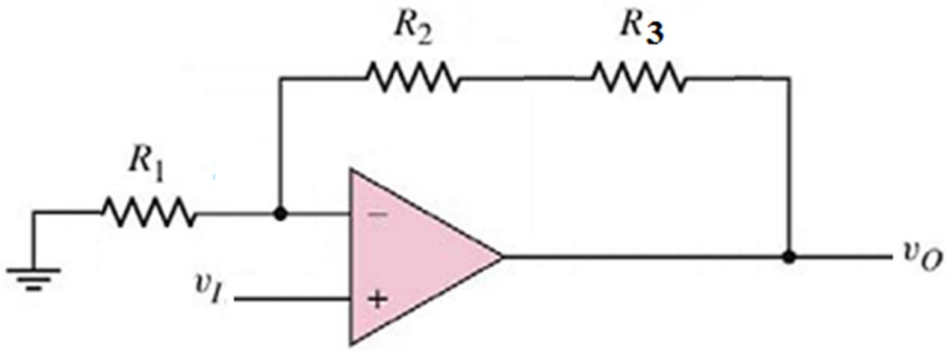

Figure 1

For an **ideal non-inverting amplifier** shown in **Figure 1**, given that R_1 = **12 kΩ** and R_2 = **28 kΩ.**
Find the value of R_3 so that v_O = **-3.6 V** when v_I = **-240 mV**. **[10 marks]**
Show clearly all formula and calculations in order to get full marks.

Answer:

Av = vO / vI [2]

Av = (-3.6) / (-240m) = 15 [2]

Av = 1 + (R2 + R3) / R1 = 1 + R2 / R1 + R3 / R1 [3]

15 = 1 + 28k / 12k + R3 / 12k [1]

R3 = 140 kq [2]