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Unit 7 - Week 6

Assignment 6

The due date for submitting this assignment has passed. Due on 2018-03-07, 23:59 IST.
As per our records you have not submitted this assignment.

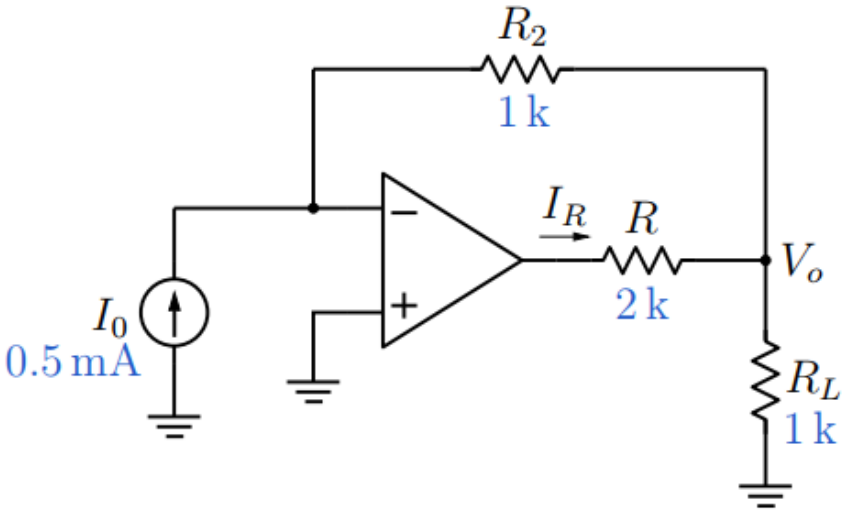
1) If the emitter resistance R_E in the common-emitter amplifier is partially bypassed, ***1 point***

- the input resistance decreases.
- the voltage gain increases.
- a larger input voltage can be applied without causing distortion in the output waveform.
- the DC (bias) value of I_C increases.

No, the answer is incorrect.
Score: 0

Accepted Answers:
a larger input voltage can be applied without causing distortion in the output waveform.

2) What is V_0 in the following circuit? ***1 point***



- $0.5V$
- $-0.5V$
- $-1V$
- $1V$

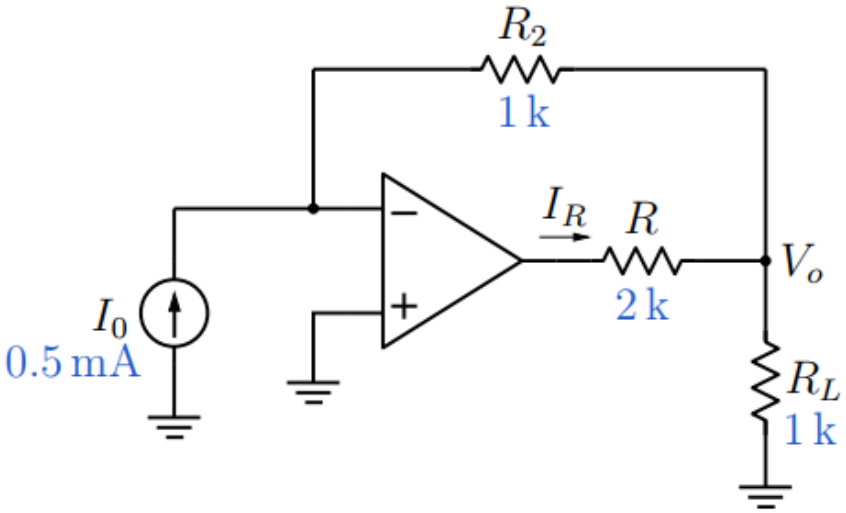
No, the answer is incorrect.
Score: 0

Accepted Answers:

Week 9
Week 10
Week 11
Week 12

$-0.5V$

3) In the circuit of Q-2, what is I_R? *1 point*

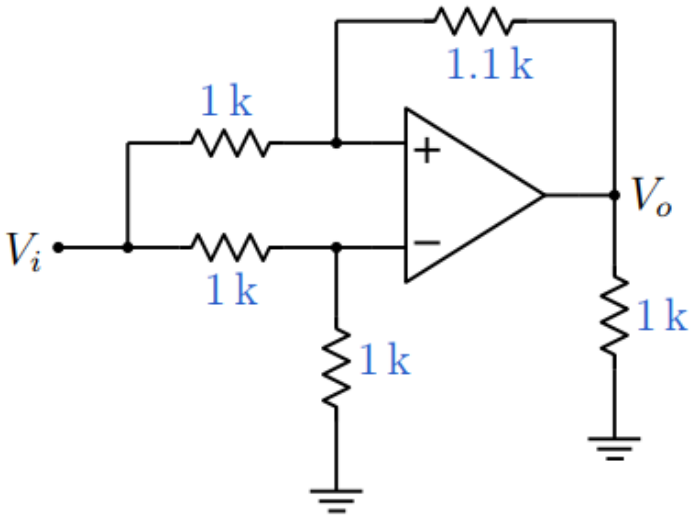


- $0.5mA$
- $-0.75mA$
- $1mA$
- $-1mA$

No, the answer is incorrect.
Score: 0

Accepted Answers:
$-1mA$

4) In the circuit shown in the figure with $V_i = 2V$, what is V_o? *1 point*



- -0.1V
- 0.2V
- -0.2V
- 0.55V

No, the answer is incorrect.
Score: 0

Accepted Answers:
-0.1V

5) *1 point*

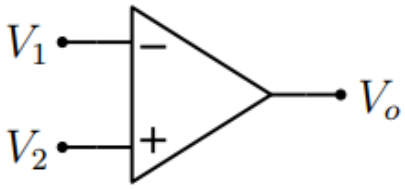
In the circuit shown in the figure, what is V_o for $V_i = 0.1V$?

- 0.4V
- 0.3V
- 0.6V
- 0.2V

No, the answer is incorrect.
Score: 0

Accepted Answers:
0.3V

6) The figure shows a comparator with inputs V_1 and V_2, and output V_o where $V_2 = 2V$ (DC), ***1 point***
and V_1 is a triangular signal with a frequency of 1 kHz and peak-to-peak voltage of 10 V. What is the duty cycle of the output voltage?

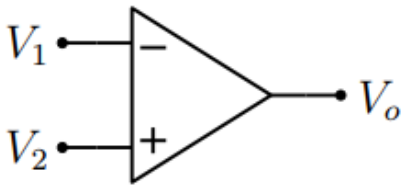


- 0.6
- 0.33
- 0.45
- 0.7

No, the answer is incorrect.
Score: 0

Accepted Answers:
0.7

7) The figure shows a comparator with inputs V_1 and V_2, and output V_o where ***1 point***
$V_2 = 2V$ (DC), and V_1 is a sinusoidal signal with a frequency of 1 kHz and peak-to-peak voltage of 10 V. What is the duty cycle of the output voltage?



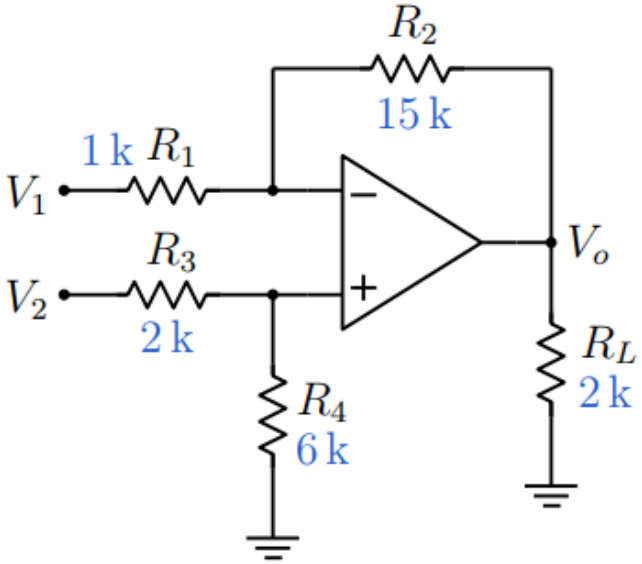
- 0.63
- 0.45
- 0.72
- 0.28

No, the answer is incorrect.
Score: 0

Accepted Answers:
0.63

8) ***1 point***

In the circuit shown in the figure $V_1 = 0.1V$, and $V_2 = 0.2V$. What is V_o?

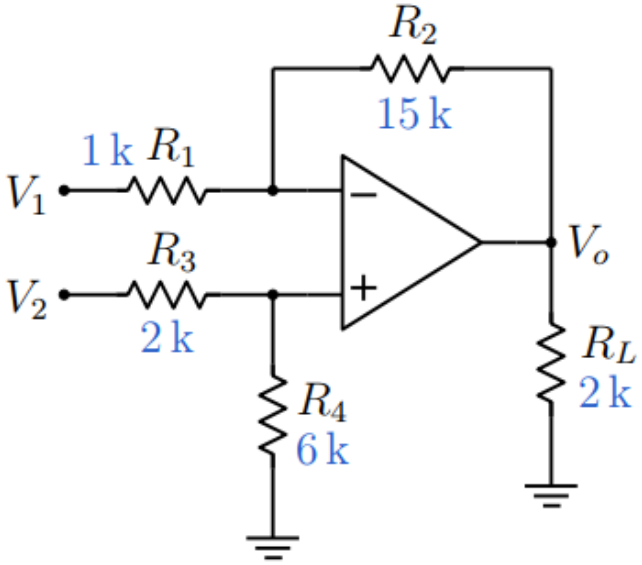


- 0.6V
- -1.2V
- 0.9V
- -0.3V

No, the answer is incorrect.
Score: 0

Accepted Answers:
0.9V

9) In the op-amp circuit of Q-8, let $V_1 = 0.2sin\omega t$ Volts and $V_2 = 0.1sin\omega t$ Volts. What is V_o (in Volts)? ***1 point***



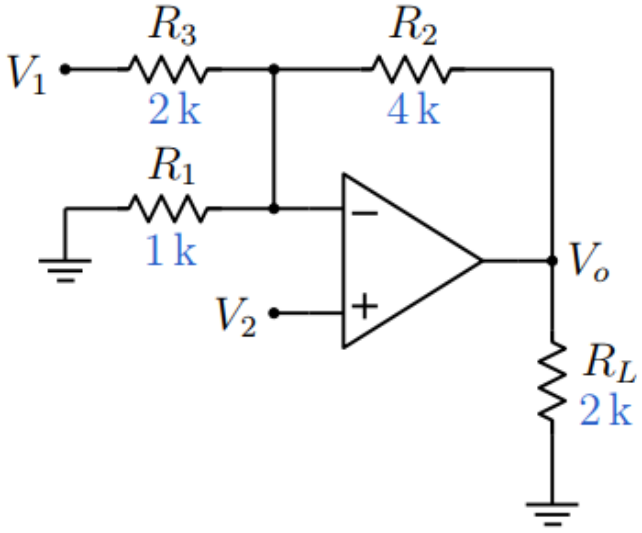
- $0.6sin\omega t$
- $-1.2sin\omega t$
- $0.9sin\omega t$
- $-1.8sin\omega t$

No, the answer is incorrect.
Score: 0

Accepted Answers:

$-1.8sin\omega t$

10) In the op-amp circuit shown in the figure, the output voltage is given by $V_o = k_1V_1 + k_2V_2$. What are the values of k_1 and k_2? *1 point*

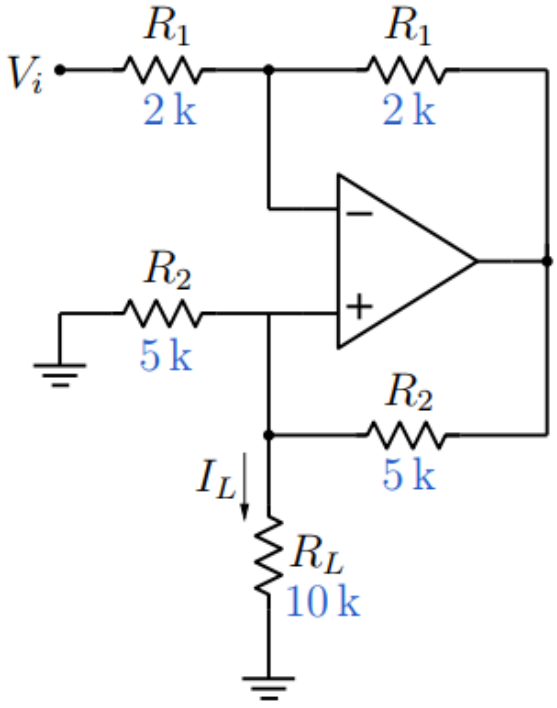


- $k_1 = -3, k_2 = 5$
- $k_1 = -2, k_2 = 7$
- $k_1 = 2, k_2 = 2$
- $k_1 = 3, k_2 = 5$

No, the answer is incorrect.
Score: 0

Accepted Answers:
$k_1 = -2, k_2 = 7$

11) In the op-amp circuit shown in the figure, what input voltage V_i should be applied to get a current $I_L = 50\mu A$ through R_L? *1 point*



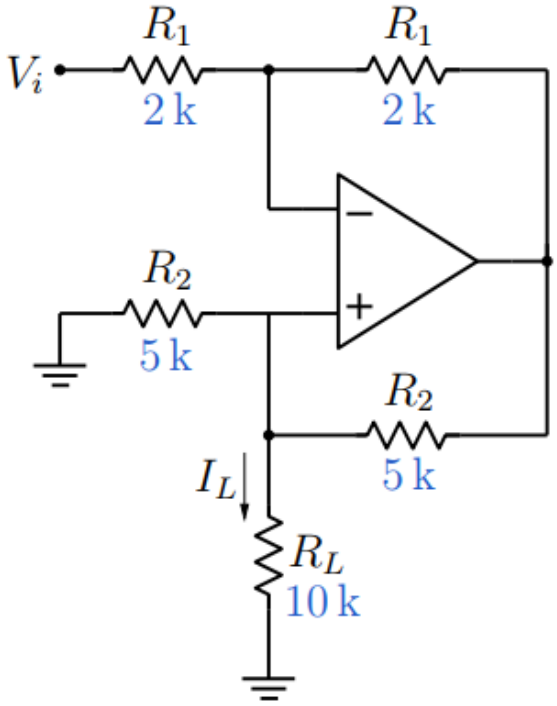
- 0.5V
- 0.6V

- -0.25V
- -0.4V

No, the answer is incorrect.
Score: 0

Accepted Answers:
-0.25V

12) In the circuit of Q-11, R_1 is changed (i.e., both resistances marked as R_1) from $2k\Omega$ to $4k\Omega$. What input voltage Vi should be applied to get a current $I_L = 50\mu A$ through R_L? ***1 point***

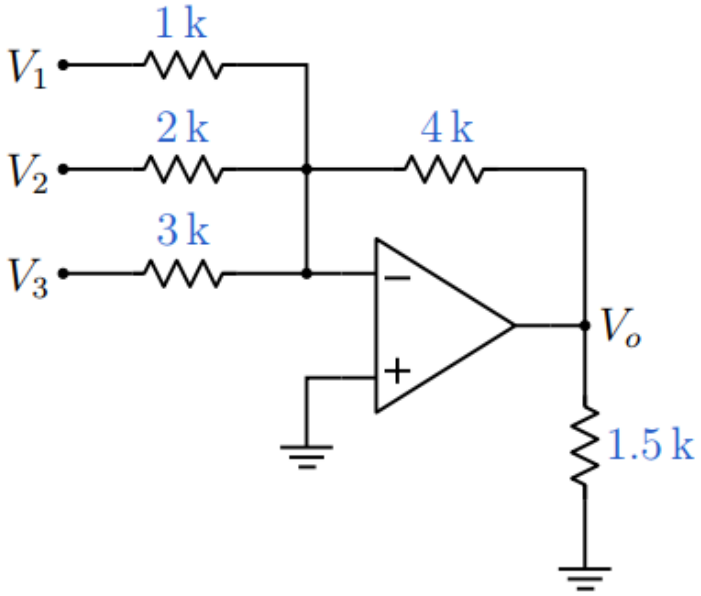


- -0.5V
- -0.25V
- 0.5V
- 1V

No, the answer is incorrect.
Score: 0

Accepted Answers:
-0.25V

13) In the circuit shown in the figure, $V_1 = 0.1V$, $V_2 = 0.2sin\omega t$, and $V_3 = -0.3V$. Which of the following options correctly describes the output waveform $V_o(t)$? ***1 point***

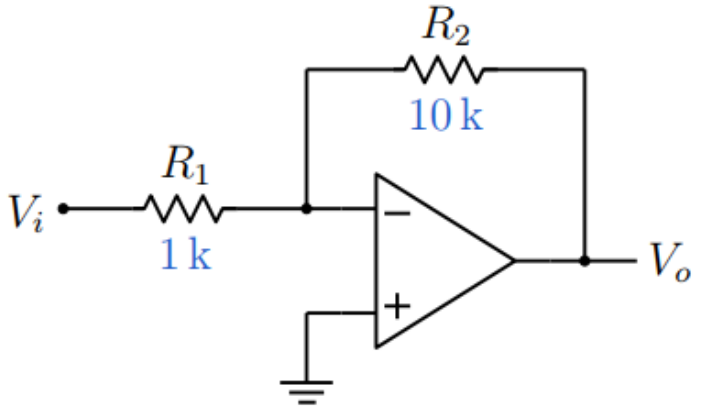


- $V_o(t) = -0.4sin\omega t$
- $V_o(t) = 0.1sin\omega t + 0.3$
- $V_o(t) = -0.4sin\omega t + 0.2$
- $V_o(t) = -0.1sin\omega t - 0.2$

No, the answer is incorrect.
Score: 0

Accepted Answers:
$V_o(t) = -0.4sin\omega t$

14) In the inverting amplifier shown in the figure, the op-amp is ideal except that it has a finite gain $A_V = 100$. For an input voltage $V_i = 0.1V$, what is V_o? ***1 point***



- -0.95V
- -1V
- -0.9V
- -0.85V

No, the answer is incorrect.
Score: 0

Accepted Answers:
-0.9V

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