Unit 10 - Week 8: Opamp and negative feedback; Example circuits and additional topics

Assignment 8

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

1) \[ V_1 \rightarrow A_0 = 396 \rightarrow V_o \]

Determine the percentage error from the ideal gain in the figure above. Ideal gain refers to \( V_o/V_1 \) with an ideal opamps. Percentage error is defined as

\[ 100 \left( \frac{V_o}{V_1} \right|_{\text{ideal}} - \frac{V_o}{V_1} \) \]

(The answer must be the percent error. Round off fractional answers to one decimal place.)

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 3.8, 4.2

2) \[ V_1 \rightarrow A_0 = 396 \rightarrow A_0 = 396 \rightarrow V_o \]

Determine the percentage error from the ideal gain in the figure above. Ideal gain refers to \( V_o/V_1 \) with an ideal opamps. Percentage error is defined as

\[ 100 \left( \frac{V_o}{V_1} \right|_{\text{ideal}} - \frac{V_o}{V_1} \)

(The answer must be the percent error. Round off fractional answers to one decimal place.)
3) Determine the negative terminal of the opamp in the figure above so that it is in negative feedback.

- A
- B

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 1.95,2.15

4) In the circuit above, determine the coefficients $\alpha$ and $\beta$ in the expression for the output $V_o$.

$V_o = \alpha V_1 + \beta V_2$

(The answer must be the coefficient values. Round off fractional answers to two decimal places.)

**Value of $\alpha$**

- No, the answer is incorrect.
- Score: 0
- Accepted Answers:
  (Type: Range) -0.6,-0.4

**Value of $\beta$**

- No, the answer is incorrect.
- Score: 0
- Accepted Answers:
  (Type: Range) 1.1,1.3

6) Determine the negative terminals of the two opamps in the figure above so that they are in negative feedback.

**Negative terminal of OPA1**

- A
- B

- No, the answer is incorrect.
- Score: 0
- Accepted Answers:
7) **Negative terminal of OPA₂**
   - A
   - B
   No, the answer is incorrect.
   Score: 0
   Accepted Answers: A

8) In the figure above, determine the highest amplitude \( V_p \) such that the opamp is not saturated.
   
   *(The answer must be in volts (V). Round off fractional answers to two decimal places.)*

   No, the answer is incorrect.
   Score: 0
   Accepted Answers: *(Type: Range) 2.90,3.10*

9) In the circuit above, \( I_p = I_m = 3 \text{ mA} \) when \( V_i = 0 \). Determine the average current drawn from the supplies when \( V_i = \pi \cos(\omega t) \).
   
   *(The answer must be in milliamperes (mA). Round off fractional answers to one decimal place.)*

   No, the answer is incorrect.
   Score: 0
   Accepted Answers: *(Type: Range) 52,54*
In the circuit above, determine the power delivered by the 3 V source.

(The answer must be in milliwatts (mW). Round off fractional answers to one decimal place.)