

# Introduction to Different Error Sources

TI Precision Labs – Current Sense Amplifiers

Quiz

# Introduction to different error sources – quiz

1. Room-sum-square (RSS) error is more conservative than worst-case error.
  - a) True
  - b) False
  
2. Which of the following describes a referred-to-input (RTI) specification?
  - a) Given relative to the signal at the device output, after gain
  - b) Given relative to the signal at the power supply
  - c) Given relative to the signal at the device input, before gain
  - d) None of the above

# Introduction to different error sources – quiz

3. What is the % error of a system with  $V_{out\_ideal} = 500 \text{ mV}$  and  $V_{out\_actual} = 525 \text{ mV}$ ?
- a) 2.5%
  - b) 4%
  - c) 5%
  - d) 10%
4. Why does offset error dominate the total error at low inputs?
- a) Offset voltage can be small compared to the input voltage
  - b) Offset voltage can be large compared to the input voltage
  - c) Input bias current can be small compared to the input voltage
  - d) Input bias current can be large compared to the input voltage

# Introduction to different error sources – quiz

5. What is  $V_{out\_actual}$  for a system with  $V_{in} = 10 \text{ mV}$ ,  $\text{gain} = 20\text{V/V}$ , and  $\text{gain error} = \pm 1\%$ ?
- a)  $200 \text{ mV} \pm 0.5 \text{ mV}$
  - b)  $200 \text{ mV} \pm 1 \text{ mV}$
  - c)  $200 \text{ mV} \pm 2 \text{ mV}$
  - d)  $200 \text{ mV} \pm 4 \text{ mV}$
6. Which is **not** an example of application-specific error in current sense amps?
- a) Temperature drift
  - b) Input bias current
  - c) Printed circuit board (PCB) layout
  - d) Offset error

# Answers

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