Quiz

- True or false: When designing a loop filter for a tunable frequency range, the filter should be designed to meet a loop gain constant equal to the arithmetic mean of the minimum and maximum values the loop gain constant takes for the range of VCO frequencies selected.
- True or false: The zero of the transfer function, T2, is independent of the loop filter order and is always equal to R2 times C2 for a passive loop filter.
- True or false: When a device has integrated loop filter components, no external loop filter components need to be added to the schematic.

Please read the following sentences and determine if each statement is true or false. The next page will have the answers.

Quiz

- True or **false**: When designing a loop filter for a tunable frequency range, the filter should be designed to meet a loop gain constant equal to the arithmetic mean of the minimum and maximum values the loop gain constant takes for the range of VCO frequencies selected.
- **True** or false: The zero of the transfer function, T2, is independent of the loop filter order and is always equal to R2 times C2 for a passive loop filter.
- True or **false**: When a device has integrated loop filter components, no external loop filter components need to be added to the schematic.

Statement 1:

False – The loop filter should be designed for the ***geometric*** mean of the minimum and maximum values the loop gain constant takes, not the arithmetic mean.

Statement 2:

True – The zero of the transfer function, T2, is independent of the loop filter order and is always equal to R2 times C2 for a passive loop filter.

Statement 3:

False – While a fully integrated loop filter is possible, sometimes only part of the loop filter will be integrated in the device. The parts of the loop filter that aren't on-chip will still need to be routed to externally.