

# PLL Transient Response Quiz

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# Quiz

- **True or False: The phase margin is the phase of the open loop transfer function when the gain of the PLL is equal to 0 dB.**
- **True or False: Phase margins under  $30^\circ$  should be avoided to enhance the stability of the PLL and minimize ringing.**
- **True or False: Larger bandwidths lead to shorter lock times.**

# Quiz

- **True or False: The phase margin is the phase of the open loop transfer function when the gain of the PLL is equal to 0 dB.**
  - The phase margin is the distance of the phase from **-180 degrees** when the gain of the PLL is equal to 0 dB.
- **True or False: Phase margins under  $30^\circ$  should be avoided to enhance the stability of the PLL, and minimize ringing.**
  - Phase margins under  $30^\circ$  can lead to instability, peaking in the closed loop filter response, and ringing in the transient response.
- **True or False: Larger bandwidths lead to shorter lock times.**
  - Wider loop bandwidths allow the PLL to track changes in frequency faster.