QUANTIZATION NOISE AS A FUNCTION OF WORD SIZE
Quantization Noise Analysis

- Example
  - 3-bit quantization
  - 25.2 dB SNR (not very accurate with this waveform)
Quantization Noise Analysis

• Example
  – 4-bit quantization
  – 31.5 dB SNR (more accurate)
    Note 31.5 dB = 25.2 dB + 6.3 dB
Quantization Noise Analysis

• Example
  – 5-bit quantization
  – 37.7 dB SNR (more accurate)
    Note 37.7 dB = 31.5 dB + 6.2 dB
difff().m matlab script

- Very useful in finding the character of the differences in two waveforms
  - Works with complex data
  - Also prints SNR and other calculated data
- Example
  - 3-bit quantization
  - 25.2 dB SNR (not accurate with this waveform)
- Posted on the 281 web page under “matlab: simple functions useful for 281”
Quantization Noise Analysis

- Matlab code that generates the plots on the previous slides
- Copy, paste, run, and modify it yourself!