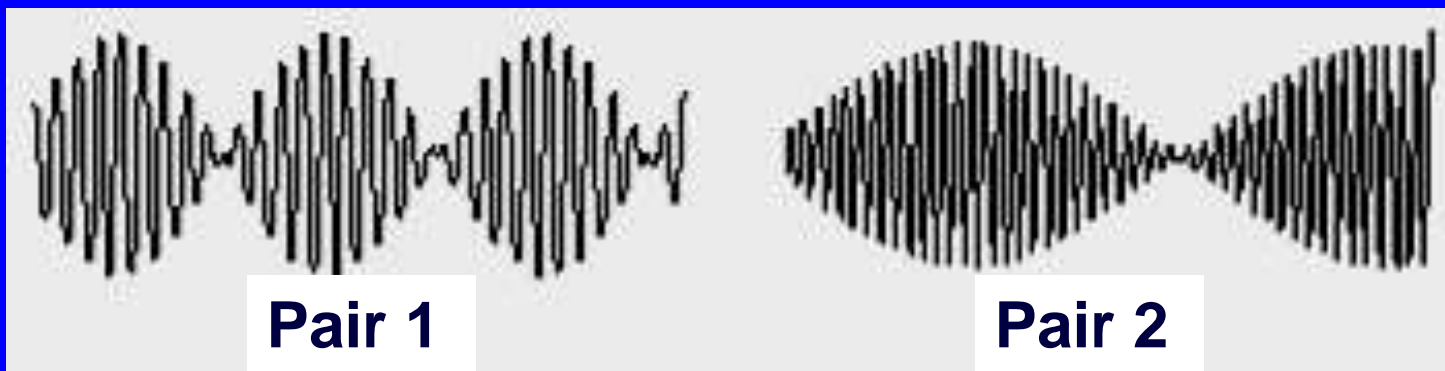




ConceptTest 16.10 Beats

The traces below show beats that occur when two different pairs of waves interfere. For which case is the *difference in frequency* of the original waves *greater*?

- 1) pair 1
- 2) pair 2
- 3) same for both pairs
- 4) impossible to tell by just looking



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1) pair 1

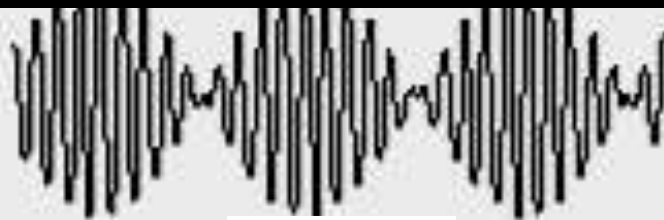
2) pair 2

3) same for both pairs

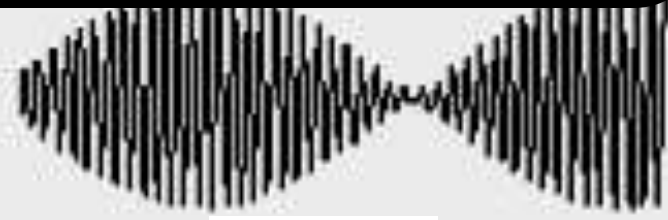
4) impossible to tell by just looking

Recall that the beat frequency is the *difference in frequency* between the two waves: $f_{\text{beat}} = f_2 - f_1$

Pair 1 has the *greater beat frequency* (more oscillations in same time period), so Pair 1 has the *greater frequency difference*.



Pair 1



Pair 2

You hear three beats per second when two sound tones are generated. The frequency of one tone is known to be 610 Hz. The frequency of the other is

1. 604 Hz.
2. 607 Hz.
3. 613 Hz.
4. 616 Hz.
5. Either 2 or 3.

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 **5. Either 2 or 3.**