

Example 3-6: Calculating f_0

The fundamental frequency is the *largest* f_0 such that $f_k = kf_0$. In mathematical terms, this is the *greatest common divisor*, so we can state

$$f_0 = \gcd\{f_k\}$$

For example, if the signal is the sum of sinusoids with frequencies 1.2, 2, and 6 Hz, then $f_0 = 0.4$ Hz, because 1.2 Hz is the 3rd harmonic, 2 Hz is the 5th harmonic, and 6 Hz is the 15th harmonic.

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