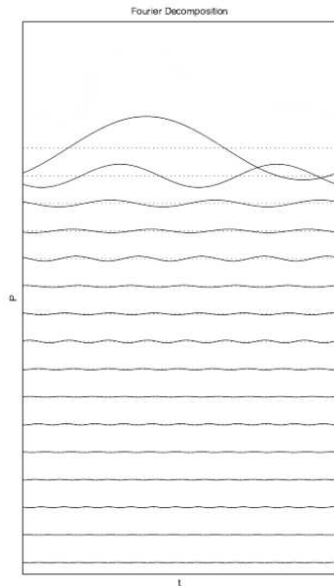


## Find the start of the wave - Fourier representation

The challenge is to find the start of the wave (the rapid rise of pressure at the start of systole) using the Fourier decomposition and the decomposition using successive waves.

First you will see the Fourier components of the wave. Point to the time when you think the wave starts and click on [⇒] below or press <return> to see the waveform.

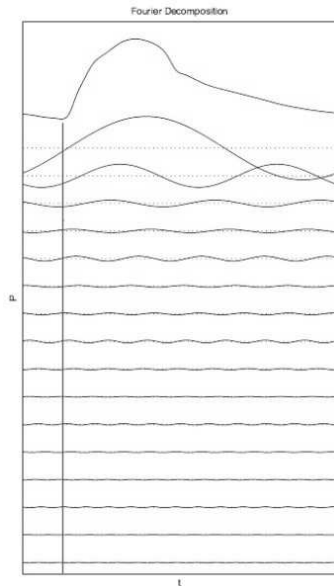


[⇒]

## Find the start of the wave - Fourier representation

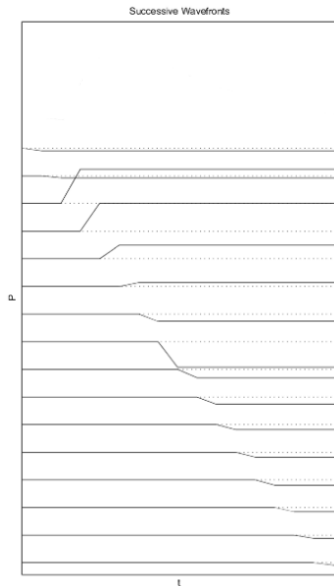
How did you do?

It is very difficult to identify particular times in a waveform from the Fourier representation. Sinusoidal waves do not 'start' or 'stop', they are always present and particular features of a waveform are formed by the summation of all of the sinusoids of different frequencies.



## Find the start of the wave - successive wavefronts representation

Now try it with the successive wavefront representation of the wave.



## Find the start of the wave - successive wavefronts representation

It was probably easier for you to find the start of the wave in this representation.

Since the successive waves give a representation of the waveform in the time domain, it is much easier to relate these waves to particular times in the cardiac cycle. Fourier analysis is carried out in the frequency domain and it is difficult to locate particular times using this representation of a waveform.

{the end}

