http://en.wikipedia.org/wiki/Convolution

1. Express each function in terms of a dummy variable τ.
2. Reflect one of the functions: $g(\tau) \rightarrow g(-\tau)$.
3. Add a time-offset, t, which allows $g(t-\tau)$ to slide along the τ-axis.
4. Start t at -∞ and slide it all the way to +∞. Wherever the two functions intersect, find the integral of their product. In other words, compute a sliding, weighted-average of function $f(\tau)$, where the weighting function is $g(-\tau)$.

The resulting waveform (not shown here) is the convolution of functions f and g. If ***f(t)*** is a unit impulse, the result of this process is simply ***g(t)***, which is therefore called the impulse response.

See also http://www.jhu.edu/signals/convolve/