Let's consider a different set of functions to illustrate convolution and correlation.

Suppose we have the following functions:

$$x(n) = \delta(n) + \delta(n-1) + \delta(n-4)$$
$$h(n) = \delta(n) + \delta(n-1)$$

Convolution of $x(n)$ with $h(n)$:

To convolve $x(n)$ with $h(n)$, we flip $h(n)$ around $n = 0$ (which does not change $h(n)$ since it is symmetric), and then slide $h(n)$ over $x(n)$, calculating the sum of products at each step:

- At shift $n = 0$, $h(0)$ overlaps with $x(0)$, giving us $1 \times 1 = 1$.
- At shift $n = 1$, $h(1)$ overlaps with $x(0)$ and $h(0)$ with $x(1)$, giving us $1 \times 1 + 1 \times 1 = 2$.
- At shift $n = 2$, $h(0)$ overlaps with $x(2)$, giving us $1 \times 1 = 1$.
- At shift $n = 3$, there is still no overlap with $x(4)$, so the result is 0.
- At shift $n = 4$, $h(1)$ overlaps with $x(3)$, giving us $1 \times 1 = 1$.

The convolution result is: $[1, 2, 1, 0, 1, 0]$.

Correlation of $x(n)$ with $h(n)$:

To correlate $x(n)$ with $h(n)$, we slide $h(n)$ over $x(n)$ without flipping it and calculate the sum of products at each step:

- At shift $n = 0$, $h(0)$ overlaps with $x(0)$, giving us $1 \times 1 = 1$.
- At shift $n = 1$, $h(1)$ overlaps with $x(0)$ and $h(0)$ with $x(1)$, giving us $1 \times 1 + 1 \times 1 = 2$.
- At shift $n = 2$, $h(1)$ overlaps with $x(1)$, giving us $1 \times 1 = 1$.
- At shift $n = 3$, there is no overlap with $x(4)$, so the result is 0.
- At shift $n = 4$, $h(0)$ overlaps with $x(4)$, giving us $1 \times 1 = 1$.

The correlation result is: $[1, 2, 1, 0, 1]$.

These examples assume zero-padding of the signals where there is no overlap. The discrete delta function $\delta(n)$ is 1 at $n = 0$ and 0 everywhere else.