

Source Code	O
Waveform	O

1. Source Code

```
`timescale 1ns/1ns
module operator_tb();
  reg [4:0] in1;
  reg [4:0] in2;
  reg [5:0] out2130;

  initial begin
    $dumpfile("output.vcd");
    $dumpvars(0);

    in1=0; in2=0; out2130=0;

    /* 1-1번 : Provide and show an example */
    #3 in1=5'b1010; in2=5'b101x;
    out2130 = in1 + in2;

    /* 1-2번 : in1 = 5'b1101, in2 = 5'bx1101 */
    #3 in1=5'b1101; in2=5'bx1100;
    out2130 = in1 + in2;

    /* 2-1번 */
    #3 in1=5'bx; in2=-2;
    out2130 = in1&&in2;
    #3 out2130 = in1||in2;
    #3 out2130 = in1&in2;
    #3 out2130 = in1|in2;

    /* 2-2번 */
    #3 in1=-10; in2=-2;
    out2130 = in1&&in2;
    #3 out2130 = in1||in2;
    #3 out2130 = in1&in2;
    #3 out2130 = in1|in2;

    /* 3번 */
    #3 in1=5'b100z; in2=5'b1100;
    out2130 = in1 < in2;

    /* 4번 */
    #3 in1=5'b1xxz; in2=5'b1xxx;
    out2130 = (in1==in2);
    #3 out2130 = (in1==in2);

    /* 5번 */
    #3 in1 = 5'b1001x;

    out2130 = &in1;
    #3 out2130 = ^in1;

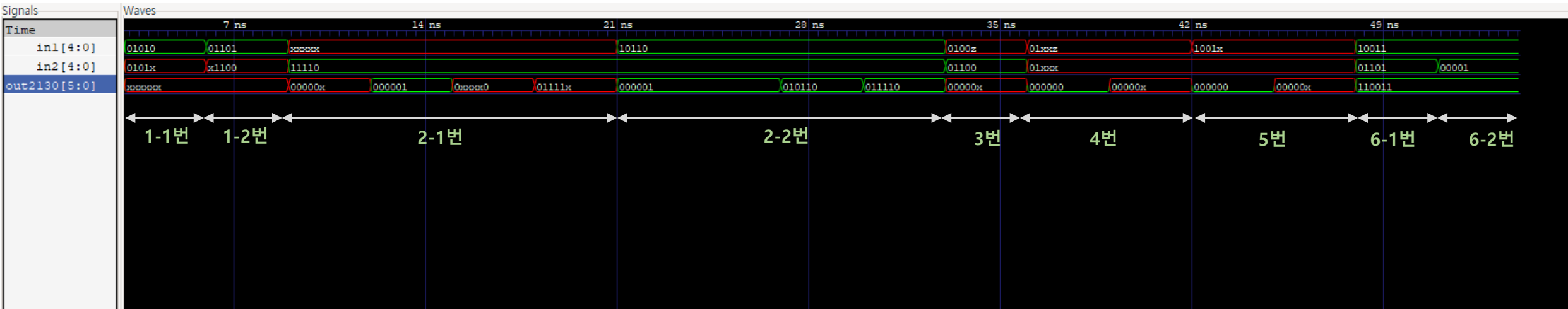
    /* 6-1번 */
    #3 in1=5'b10011; in2=5'b01101;
    out2130 = (in1 << 1) + in2;
    $display("out2130 : ", out2130);

    /* 6-2번 */
    #3 in1=5'b10011; in2=1'b1;
    out2130 = {in2, in1};

    #3 $finish;
  end
endmodule
```

Source Code	<input type="radio"/>
Waveform	<input type="radio"/>

2. Waveform



- 1-1번 : Example (in1 = 5'b01010; in2 = 5'bx0101x)
- 1-2번 : in1 = 5'b1101; in2 = 5'bx1100;
- 2-1번 : in1 = 5'bx; in2 = -2
- 2-2번 : in1 = -10; in2 = -2;
- 3번 :
- 4번 :
- 5번 :
- 6-1번 : in1을 shift하고, 여기에 in2 = 5'b01101을 더해 구현
- 6-2번 : concatenation operator 사용