課題8-5(1)

真理值表

x_1	x_2	x_3	Z
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	1
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	1

プログラム

circuit.v

```
module circuit (
    input x1, x2, x3,
    output z
);
wire w1;
    and a(w1,x3,x2);
    or(z,x1,w1);
endmodule
```

main.v

```
`timescale 1ns/1ns
module circuit_test;
   reg x1, x2, x3;
   wire z;
   circuit f(x1,x2,x3,z);
   initial begin
       x1 = 0; x2 = 0; x3 = 0;
       $dumpfile("main.vcd");
       $dumpvars(0, circuit_test);
       $monitor("x1=%b x2=%b x3=%b z=%b", x1, x2, x3, z);
       // Test cases
       #10; x1 = 0; x2 = 0; x3 = 0;
               x1 = 0; x2 = 0; x3 = 1;
              x1 = 0; x2 = 1; x3 = 0;
       #10;
       #10; x1 = 0; x2 = 1; x3 = 1;
       #10; x1 = 1; x2 = 0; x3 = 0;
```

実行結果

```
    x1=0
    x2=0
    x3=0
    z=0

    x1=0
    x2=1
    x3=1
    z=0

    x1=0
    x2=1
    x3=0
    z=1

    x1=1
    x2=0
    x3=0
    z=1

    x1=1
    x2=0
    x3=1
    z=1

    x1=1
    x2=1
    x3=0
    z=1

    x1=1
    x2=1
    x3=1
    z=1
```

波形



シミュレーション波形