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// half adder test bench
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`include "halfAdder.v"
module half_tb();
    reg a, b;
    wire sum, cout;
    halfAdder half(a,b,sum,cout);
    initial begin
        a = 0; b = 0;
        #1 a = 0; b = 1;
        #1 a = 1; b = 0;
        #1 a = 1; b = 1;
    end
    initial begin
        $monitor("%t | A = %d | B = %d | Sum = %d | Carry out = %d |", $time, a,
b, sum, cout);
    end
endmodule
```