## Full adder                                                    X12983_en

Design a full adder. A full adder is a circuit that performs a 1-bit addition receiving an input carry and generating an output carry.

The top module must be called *full_adder*.

```
module full_adder(a, b, cin, sum, cout);
    input  a, b, cin;
    output sum, cout;
```

### Input

- *a* and *b* are the two inputs.

- **cin** is the input carry.

### Output

- *sum* is the sum of the two bits and the input carry.

- **cout** is the output carry.

### Problem information

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