

Homework 1

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1. Problem 1

```
def divide_by_three(integerlist):  
    """  
    This function outputs a list where, if the integer on  
    the input list is divisible by three, the corresponding  
    output is 1 else the output is 0  
    """  
    return [not integerlist[i]%3 == 0 for i in range(len(integerlist))]
```

2. Problem 2: full adder

Table 1: Truth table of full adder

A	B	C_{in}	Sum	Carry
0	0	0	0	0
0	0	1	1	0
0	1	0	1	0
0	1	1	0	1
1	0	0	1	0
1	0	1	0	1
1	1	0	0	1
1	1	1	1	1