

# Lighter or Heavier?



1.  $n > 2$  identical coins
2. Exactly one coin is lighter or heavier(fake coin)  
Remaining  $(n-1)$  coins have exact weight(Genuine)
3. Balance with no weights
4. You should find whether the fake coin is  
Lighter or Heavier compared to Genuine coin

**1**

0	1	2	3	4	5	6	7	<b>n=8</b>
2	2	100	2	2	2	2	2	

**Heavier**

**2**

0	1	2	3	4	<b>n=5</b>
2	2	2	2	100	

**Heavier**

**3**

0	1	2	3	4	5	6	<b>n=7</b>
2	2	2	2	2	2	1	

**Lighter**

**4**

0	1	2	3	<b>n=4</b>
2	1	2	2	

**Lighter**

Time complexity :  
Space complexity: