0	0
1	0
0	1
1	1

```
0          0
            (2)
---------------
0.          0
*           *
2^1    +    2^0
0      +      0 = 0
```

```
1          0
            (2)
-------------------
1           0
*           *
2^1    +    2^0
-------------------
2      +    0    = 2
```

with 2 bits we have 2^2 = 4 possibilities

```
0       1
         (2)
-------------
0       1
*       *
2^1 +   2^0
-------------
0    +  1   = 1
```

```
1       1
         (2)
-------------
1       1
*       *
2^1 +   2^0
-------------
2    +  1   = 3
```

32-bit length

0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 = 4.1 billion