```
> restart; read `G:/My Drive/Aek/Arith/Sum.txt`;
> # Please feel free to explore the values yourself. These are only some examples from the
  paper.
> # Saliquant
> # First table
> [seq(Saliquant(2*n),n=1..21)];
```

$$[0, 1, 1, 3, 2, 4, 6, 7, 4, 7, 5, 10, 12, 10, 13, 15, 8, 13, 9, 17, 17]$$

```
> # Lemma 2.2
> [seq(3*n-2-Saliquant(2*(3*n)),n=1..21)];
```

$$[0, 0, 3, 0, 0, 3, 2, 0, 0, 6, 15, 3, 18, 2, 6, 0, 7, 12, 27, 6, 9]$$

```
> # Cor 2.6: Compare value of Saliquant(2*p) and p-1
> [seq(Saliquant(2*ithprime(i))/(ithprime(i)-1),i=2..20)];
```

$$\left[\frac{1}{2}, \frac{1}{2}, 1, \frac{1}{2}, 1, \frac{1}{2}, \frac{1}{2}, \frac{1}{2}, \frac{1}{2}, 1, \frac{1}{2}, \frac{1}{2}, \frac{1}{2}, \frac{1}{2}, \frac{1}{2}, 1, 1, \frac{1}{2}\right]$$

```
> # Some density in table 1
> A:=[seq(Saliquant((2*a+1)*2)-a,a=1..5000)]:
> evalf(nops(PosOf(A,0))/5000);
```

$$0.5316000000$$

```
> A:=[seq(Saliquant((2*a+1)*2)-((5*a+1)/3),a=1..5000)]:
> evalf(nops(PosOf(A,0))/5000);
```

$$0.02620000000$$

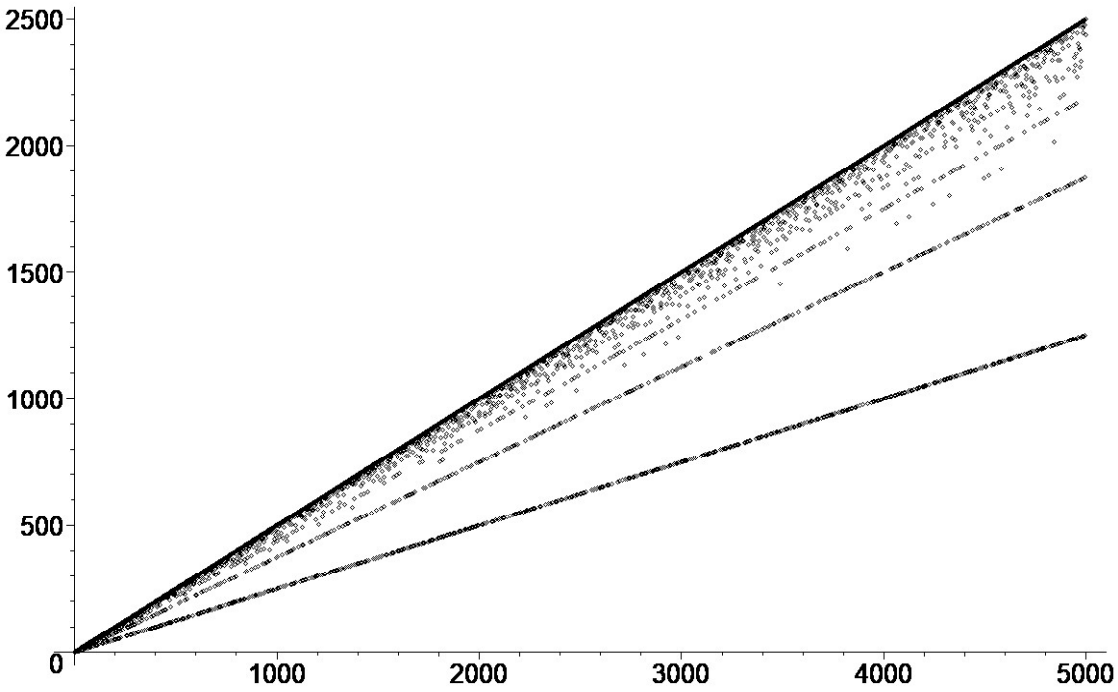
```
> A:=[seq(Saliquant((2*a+1)*4)-(3*a+1),a=1..2000)]:
> evalf(nops(PosOf(A,0))/2000);
```

$$0.5610000000$$

```
> A:=[seq(Saliquant((2*a+1)*4)-(11*a+4)/3,a=1..2000)]:
> evalf(nops(PosOf(A,0))/2000);
```

$$0.05600000000$$

```
> # Figure 1: The first 5000 nim-values of Saliquant
> A:=[seq([n,Saliquant(n)],n=1..5000)]:
> pointplot(A);
```




```
> # Conjecture 2
> [seq(Conj2(3,b),b=1..10)];
```

$$[3, 0, 0, 0, 0, 0, 0, 0, 0, 0]$$

```
> [seq(Conj2(4,b),b=1..10)];
```

$$[0, 0, 0, 0, 0, 0, 0, 0, 0, 0]$$

```
> [seq(Conj2(5,b),b=1..10)];
```

$$[0, 0, 0, 0, 0, 0, 0, 0, 0, 0]$$

```
> [seq(Conj2(6,b),b=1..10)];
```

$$[6, 0, 6, 0, 0, 0, 0, 0, 0, 0]$$

```
>
>
> # Nontotient
> [seq(NonTotient(n),n=1..30)];
```

$$[0, 1, 1, 0, 1, 1, 1, 1, 0, 0, 1, 0, 1, 0, 0, 0, 1, 1, 1, 1, 1, 1, 1, 1, 0, 1, 1, 1, 1, 0]$$

```
> # Corollary 4.3
> [seq(NonTotient(2^(2*k+1)*5),k=1..30)];
```

$$[0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0]$$

```
> [seq(NonTotient(2^(2*k)*5),k=1..30)];
```

$$[1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1]$$

```
> #Lemma 4.4
> A:=[seq(MyC2(4*n),n=1..40)];
```

$$A := [2, 3, 4, 4, 5, 5, 5, 5, 6, 6, 6, 6, 6, 6, 7, 6, 7, 7, 7, 7, 8, 7, 7, 7, 8, 7, 8, 7, 8, 8, 7, 7, 8, 8, 8, 8, 8, 9, 8]$$

```
> B:=[seq(MyC2(2*n)+1,n=1..40)];
```

$$B := [2, 3, 4, 4, 5, 5, 5, 5, 6, 6, 6, 6, 6, 6, 7, 6, 7, 7, 7, 7, 8, 7, 7, 7, 8, 7, 8, 7, 8, 8, 7, 7, 8, 8, 8, 8, 8, 9, 8]$$

```
> A-B;
```

$$[0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0]$$

```
> #Corollary 4.5
> A:=[seq(NonTotient(4*n),n=1..30)];
```

$$A := [0, 1, 0, 0, 1, 1, 1, 1, 0, 0, 0, 0, 0, 0, 1, 0, 1, 1, 1, 1, 0, 1, 1, 1, 0, 1, 0, 1, 0, 0]$$

```
> B:=[seq(1-NonTotient(2*n),n=1..30)];
```

$$B := [0, 1, 0, 0, 1, 1, 1, 1, 0, 0, 0, 0, 0, 0, 1, 0, 1, 1, 1, 1, 0, 1, 1, 1, 0, 1, 0, 1, 0, 0]$$

```
> A-B;
```

$$[0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0]$$

```
>
```