



Díjotyázóvállalkozás

Base 128 64 32 16 8 4 2 1

Base  $2^7$   $2^6$   $2^5$   $2^4$   $2^3$   $2^2$   $2^1$   $2^0$

0000000001:1

Base	128	64	32	16	8	4	2	1
Base	$2^7$	$2^6$	$2^5$	$2^4$	$2^3$	$2^2$	$2^1$	$2^0$
	0	0	0	0	0	0	1	1

0000111:1+2=3

Base	128	64	32	16	8	4	2	1
Base	$2^7$	$2^6$	$2^5$	$2^4$	$2^3$	$2^2$	$2^1$	$2^0$
	0	0	0	0	0	0	0	1
	0	0	0	0	0	0	1	1

1

1+2 = 3

0 + 0 = 0      0 + 1 + 1 = 7

Base	128	64	32	16	8	4	2	1	
Base	$2^7$	$2^6$	$2^5$	$2^4$	$2^3$	$2^2$	$2^1$	$2^0$	
	0	0	0	0	0	0	0	1	1
	0	0	0	0	0	0	1	1	$1+2 = 3$
	0	0	0	0	0	1	1	1	$1+2+4 = 7$

$$0+0+0=0 \quad 1+1+1=3$$
$$1+2+4+8=15$$

Base	128	64	32	16	8	4	2	1	
Base	$2^7$	$2^6$	$2^5$	$2^4$	$2^3$	$2^2$	$2^1$	$2^0$	
	0	0	0	0	0	0	0	1	1
	0	0	0	0	0	0	1	1	$1+2 = 3$
	0	0	0	0	0	1	1	1	$1+2+4 = 7$
	0	0	0	0	1	1	1	1	$1+2+4+8 = 15$

100 + 100 + 100 = 300

Base	128	64	32	16	8	4	2	1	
Base	$2^7$	$2^6$	$2^5$	$2^4$	$2^3$	$2^2$	$2^1$	$2^0$	
	0	0	0	0	0	0	0	1	1
	0	0	0	0	0	0	1	1	$1+2 = 3$
	0	0	0	0	0	1	1	1	$1+2+4 = 7$
	0	0	0	0	1	1	1	1	$1+2+4+8 = 15$
	0	0	0	1	1	1	1	1	$1+2+4+8+16 = 31$

1 + 2 + 4 + 8 + 16 + 32 = 63  
1 + 1 + 1 + 1 + 1 + 1 + 1 = 7  
1 + 1 + 1 + 1 + 1 + 1 + 1 = 7

Base	128	64	32	16	8	4	2	1	
Base	$2^7$	$2^6$	$2^5$	$2^4$	$2^3$	$2^2$	$2^1$	$2^0$	
	0	0	0	0	0	0	0	1	1
	0	0	0	0	0	0	1	1	$1+2 = 3$
	0	0	0	0	0	1	1	1	$1+2+4 = 7$
	0	0	0	0	1	1	1	1	$1+2+4+8 = 15$
	0	0	0	1	1	1	1	1	$1+2+4+8+16 = 31$
	0	0	1	1	1	1	1	1	$1+2+4+8+16+32 = 63$

1 + 2 + 8 + 16 + 32 + 64 = 127  
1 + 10 + 11 + 12 + 13 + 14 = 61

Base	128	64	32	16	8	4	2	1	
Base	$2^7$	$2^6$	$2^5$	$2^4$	$2^3$	$2^2$	$2^1$	$2^0$	
	0	0	0	0	0	0	0	1	1
	0	0	0	0	0	0	1	1	$1+2 = 3$
	0	0	0	0	0	1	1	1	$1+2+4 = 7$
	0	0	0	0	1	1	1	1	$1+2+4+8 = 15$
	0	0	0	1	1	1	1	1	$1+2+4+8+16 = 31$
	0	0	1	1	1	1	1	1	$1+2+4+8+16+32 = 63$
	0	1	1	1	1	1	1	1	$1+2+4+8+16+32+64 = 127$

$$\vdots 1 + 2 + 4 + 8 + 16 + 32 + 64 + 128 = 255 \vdots 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1$$

# Binary numbers

Base	128	64	32	16	8	4	2	1	
Base	$2^7$	$2^6$	$2^5$	$2^4$	$2^3$	$2^2$	$2^1$	$2^0$	
	0	0	0	0	0	0	0	1	1
	0	0	0	0	0	0	1	1	$1+2 = 3$
	0	0	0	0	0	1	1	1	$1+2+4 = 7$
	0	0	0	0	1	1	1	1	$1+2+4+8 = 15$
	0	0	0	1	1	1	1	1	$1+2+4+8+16 = 31$
	0	0	1	1	1	1	1	1	$1+2+4+8+16+32 = 63$
	0	1	1	1	1	1	1	1	$1+2+4+8+16+32+64 = 127$
	1	1	1	1	1	1	1	1	$1+2+4+8+16+32+64+128 = 255$

# Binary numbers

What are the possible 3-digit binary numbers?