[illegible]
[illegible]
[illegible] (Prolog)
[illegible] 2014-15
[illegible]

[illegible] 2:
[illegible]

[illegible] Prolog, [illegible] Java [illegible] C/C++, [illegible] (void) [illegible] Yes (true), [illegible] No (false). [illegible] C [illegible] (AND) [illegible] `and` [illegible] A, B [illegible] Y:

```
/* Κώδικας C */
int and(int A, int B)
{
   int Y;
   if (A==1 && B==1) Y=1;
   else Y=0;
   return Y;
}
```

[illegible] Prolog [illegible] A, B, Y, [illegible] Y [illegible] C. [illegible] A [illegible] B. [illegible] `and(A,B,Y)` [illegible] AND:

```
and(0,0,0).
and(0,1,0).
and(1,0,0).
and(1,1,1).
```

[illegible] AND [illegible] A=1, B=0 [illegible]:

```
?- and(1,0,Y).
Y = 0
```

[illegible] Prolog [illegible] AND [illegible] `and` [illegible]

```
?- and(A,B,0).
```

[illegible] Y=0. [illegible] Prolog [illegible]

```
A=0
B=0;

A=0
B=1;

A=1
B=0;

No
```

[illegible] Prolog [illegible] C [illegible] Java. [illegible] C [illegible] 0=and(A,B) [illegible] (compilation).

[illegible]

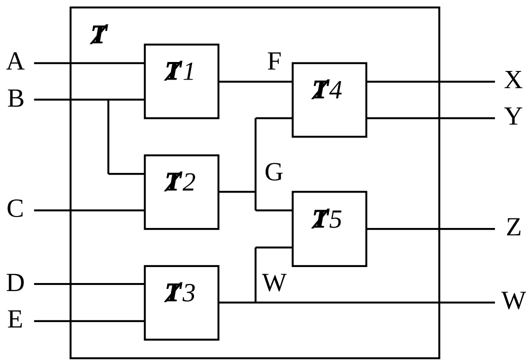
```
?- and(A,1,0).
```
% η δεύτερη είσοδος και η έξοδος γνωστές

```
?- and(0,B,1).
```
% η πρώτη είσοδος και η έξοδος γνωστές

```
?- and(A,B,Y).
```
% τίποτα γνωστό: δώσε τον πίνακα αληθείας

[illegible]

[illegible] *K* [illegible] 5 [illegible] (A, B, C, D, E) [illegible] 4 [illegible] (X, Y, X, W) [illegible]



[illegible] *K* [illegible] *K1, K2, K3, K4, K5*. [illegible] K [illegible]

```
k(A,B,C,D,E,X,Y,Z,W) :-
      k1(A,B,F),
      k2(B,C,G),
      k3(D,E,W),
      k4(F,G,X,Y),
      k5(G,W,Z).
```

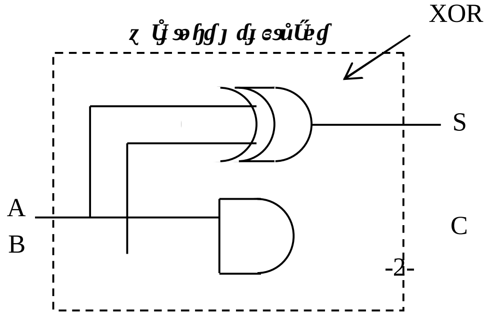
[illegible] *K* [illegible] `k()` [illegible] 9 [illegible] (5 [illegible] + 4 [illegible]) [illegible] *K3* [illegible] `k3()` [illegible] 3 [illegible] (2 [illegible] + 1 [illegible]).

[illegible] k [illegible]

[illegible]

(α) [illegible] AND, OR, XOR [illegible]

(β) [illegible] (Half-Adder) [illegible]



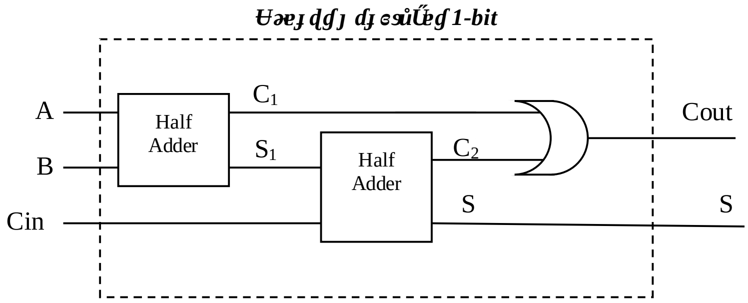
A	B	C	S
0	0	0	0
0	1	0	1
1	0	0	1

1 1 | 1 0

AND

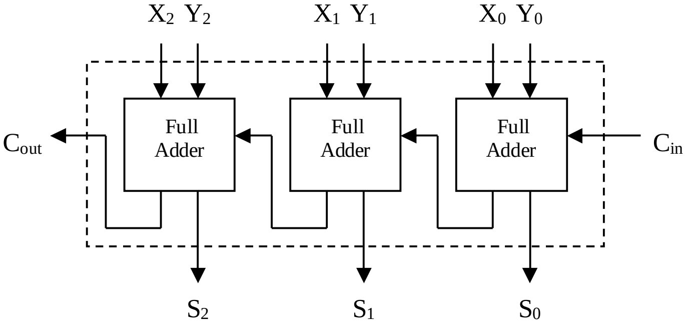
(ɔ) Ɉ ⱥɞ´ɕɶůǕǕǗɞ ɘɨ ɘⱥɤ ɛǓǗɡ ´ⱥɐɈ ɕɡʃǓʠɈ ɕɑůǗɐ 1-bit (Full Adder) ´ɕɡ ǘǓɶǕǕǓɘ´ǓɈ ǓɘƳǗɤ

Ʉⱥɐɉ ɖʃɉ ɖɈ ɕɑůǗɐʃ 1-bit



A	B	Cin	Cout	S
0	0	0	0	0
0	0	1	0	1
0	1	0	0	1
0	1	1	1	0
1	0	0	0	1
1	0	1	1	0
1	1	0	1	0
1	1	1	1	1

(ŭ) Ɉ ⱥɞ´ɕɶůǕǕ Ǘɞɜ ǓʠɈ ɕɑůǗɐ 3-bit Ǘɞ ɘɨ ɘⱥɤ ɛǓ Ǘɞɡ ɕ´ɕɶɡ ŭɶǕǕǓɘ ´ǓɈ ǓɘƳǗɤ. ɇɕ ɘɨ ɘⱥɤ ɛǓ Ǔɡǘʃ ´ɉɕůɖɏǕǓɘ ŭɨɕ Ǘɋɣɐǘɶɡɡʃ ŭɡǕɶɘɕɨ ʃ Ǔɉɖɛɕɨ ʃ ɉ 2_ɉ 1_ɉ 0 ɘǓɘ Ɉ 2_Ɉ 1_Ɉ 0 ɏɢɕɜǕǕʃ ɤ ʃ Cin ´ɑǓɜʃ ɘɈ ǓǗɕɨ ɛǓɜɕ Ǔ ʃ ´ɉɕɖɔɕɨ ɛǓɜɖ ´ɉ Ƴɜɖ ɘǓɘŭɶǓɘɤ ʃ Ǔ ɕǗɏɘǓɛǓɏɜǓ Ǘɋɣɐǘɶ ŭɡǕɶɑʃ S2_S1_S0 ɘǓɘ´ɑǓɜʃ ɘɈ ǓǗɕɨ ɛǓɜɕ ɔɑǓ Ǔ ʃɛǕɖ ´ɉ Ƴɜɖ Ǘɞ Cout.



	X2	X1	X0	
+	Y2	Y1	Y0	Cin
Cout	S2	S1	S0	

	1	0	1	
+	1	1	0	0
Cout	S2	S1	S0	

ɕɓɕⱥɶ ƳůǕǕɜǓɘƳɜǕǕǕɖɜ ŭɑ ɘǓ´ɉ ʃůɖǕɖ ɛǓǗɖ ɕɈɐůɖ Ǘɞɡ ɘǓǗɖɔɕɈɐɛǓǗɞʃ ůǓʃ.

(Ǔ) Ʉɕɘ Ǔ ǓɶǓɘǕǕǓ ɕǕǕɏůɛǓǕǕɔɑǓǗɞʃ´ǓɈ ǓɘƳǗɤ ´ɉ Ƴɜǘɞʃ ʃ´ɤ ʃɛ´ɕɈɕɨɜ ɜǓɓɈ Ǘɖɕɨɜ ɛǓǗɖ ɕɈɐůɖ Ǘɞɡ ´ǓɈ Ǔ Ƴɜɤ ɘǓǗɖɔɕɈɐɛǓǗʃʃ ůǓʃ; ɇɘɘƳɜǓ´ⱥɏɕɜ Ǘɞ ɘǓǗɖɔʃɉ ɖɛƳ ůǓʃ;

		ɉ 2	ɉ 1	ɉ 0	
+		1	1	0	Cin
1		0	1	1	

		ɉ 2	ɉ 1	ɉ 0	
+		Y2	Y1	Y0	Cin
1		0	1	1	

ɉ ´ǓɜǗɐůǓʃ:

ɉ ´ǓɜǗɐůǓʃ: