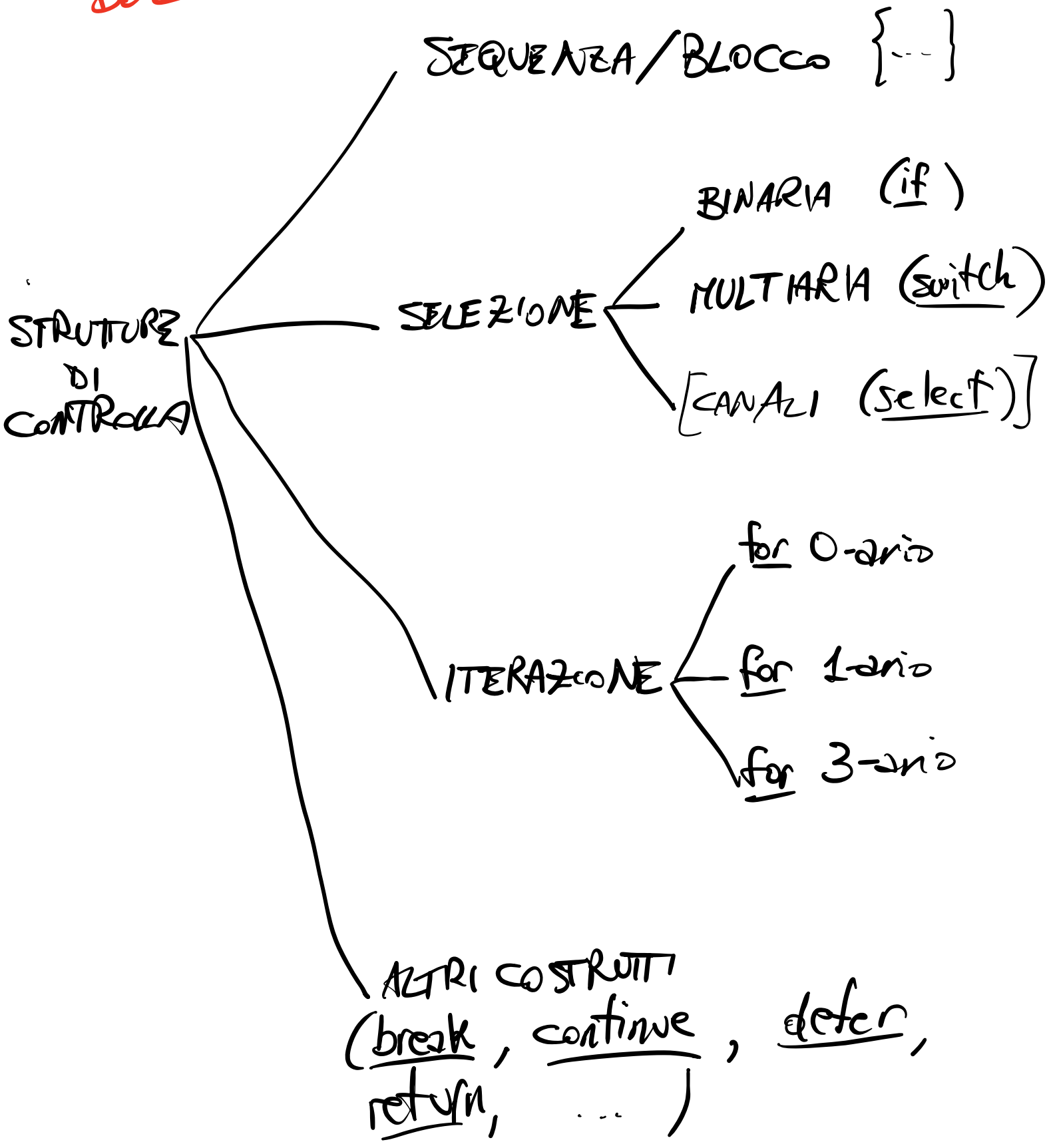
STRUTTURE DEL FLUSSO DI CONTROLLO



if

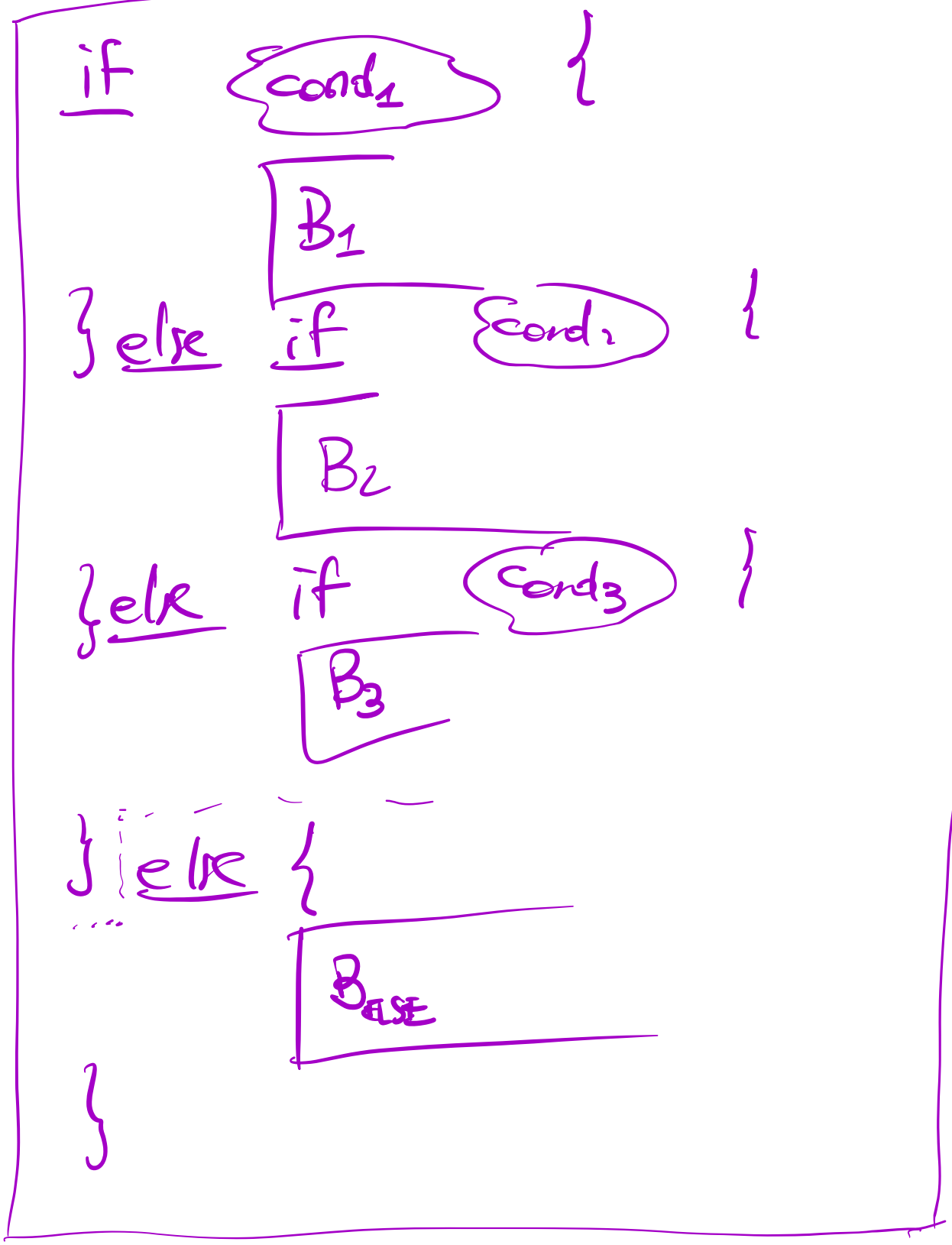
IF INCOMPLETO

```
if (condizione) {
    BLOCCO-VERO
}
```

IF COMPLETO

```
if (condizione) {
    BLOCCO-VERO
} else {
    BLOCCO-FALSO
}
```

CASCATA DI IF



```
if   x > 3   {
        A
} else if   x <= 3   {
        B
}
```

- Leggere due frazioni (numeratore e denominatore) e stabilire quale sia la più piccola

```
var n1, d1, n2, d2 int
fmt.Scan(&n1, &d1, &n2, &d2)
```

SOL 1

```
var f1, f2 float64
f1 = float64(n1) / float64(d1)
f2 = float64(n2) / float64(d2)
fmt.Print("La ")
if f1 < f2 {
    fmt.Print("prima")
} else {
    fmt.Print("seconda")
}
fmt.Println("frazione è più piccola")
```

$$\frac{n_1}{d_1} \overset{?}{<} \frac{n_2}{d_2}$$

$$n_1 \cdot d_2 \overset{?}{<} n_2 \cdot d_1$$

sol2

```
if n1*d2 < n2*d1 {
    fmt.Println("<")
} else if n1*d2 == n2*d1 {
    fmt.Println("=")
} else {
    fmt.Println(">")
}
```

$$\frac{1}{1} < \frac{4}{2}$$

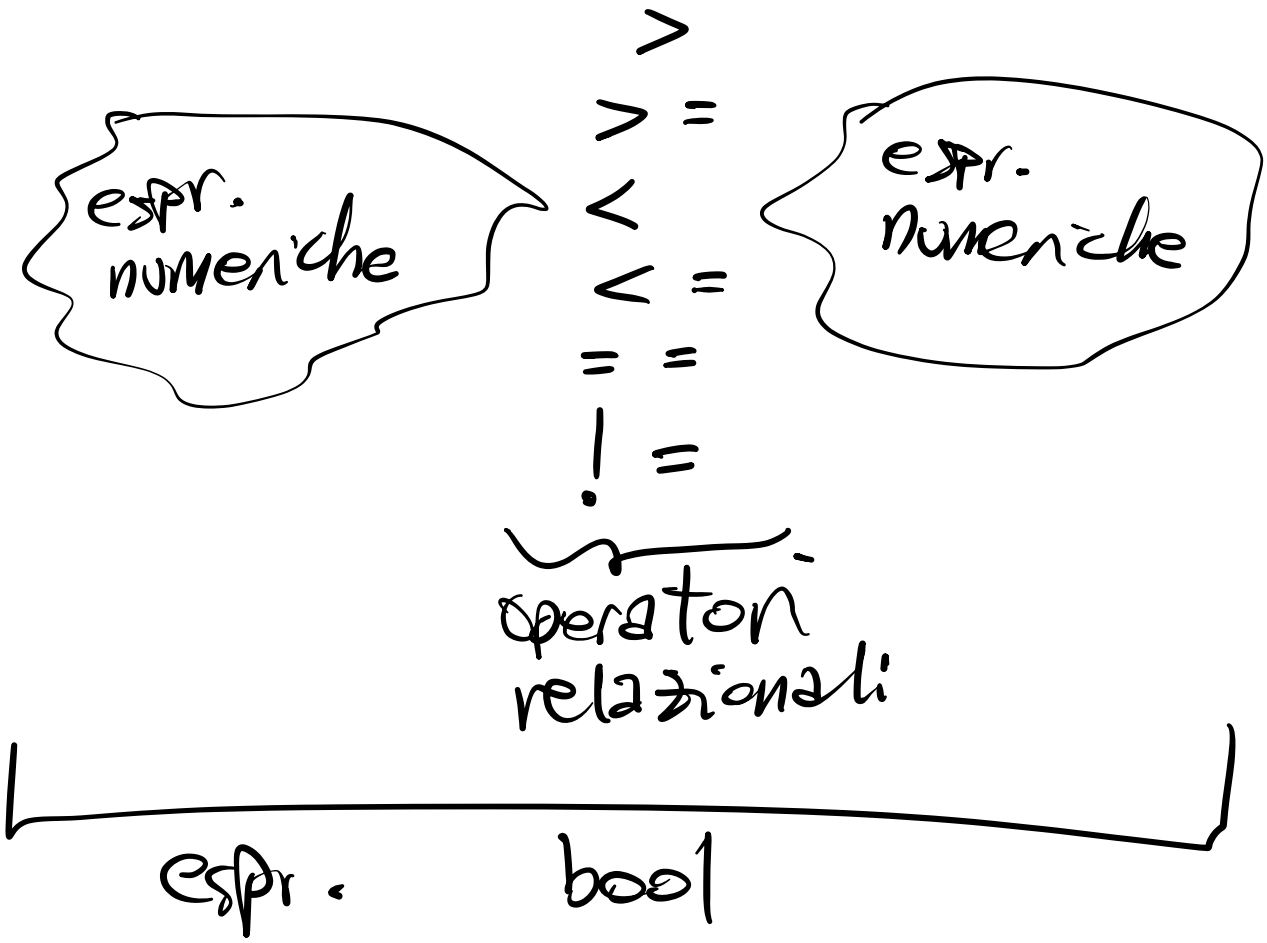
- Dati i coefficienti float a, b, c risolvere

$$ax^2 + bx + c = 0$$

su $\mathbb{R}$.

- Data la data di nascita stabilire se la persona è oggi maggiorenne (23/10/23)

CONDIZIONI = ESPRESSIONE bool



var x, y int

var b1, b2, b3, b4 bool

x = 13

y = 47

b1 = x > y

b2 = true

b3 = 4 * x >= y

b4 = b3

OPERATORI (o LOGICI)

bool

binari

&&
AND

||
OR

!
NOT

unario

&&	false	true
false	false	false
true	false	true

AND
CONGIUNZIONE LOGICA

||	false	true
false	false	true
true	true	true

OR
DISGIUNZIONE LOGICA

!	
false	true
true	false

NOT
NEGATION
LOGIC

x := 15

y := 20

z := 5

b1 := (x > y) && (z == 5)

b2 := (x <= y) && (z == 5)

b3 := !b1

b4 := !! b3

b5 := b1 && b1

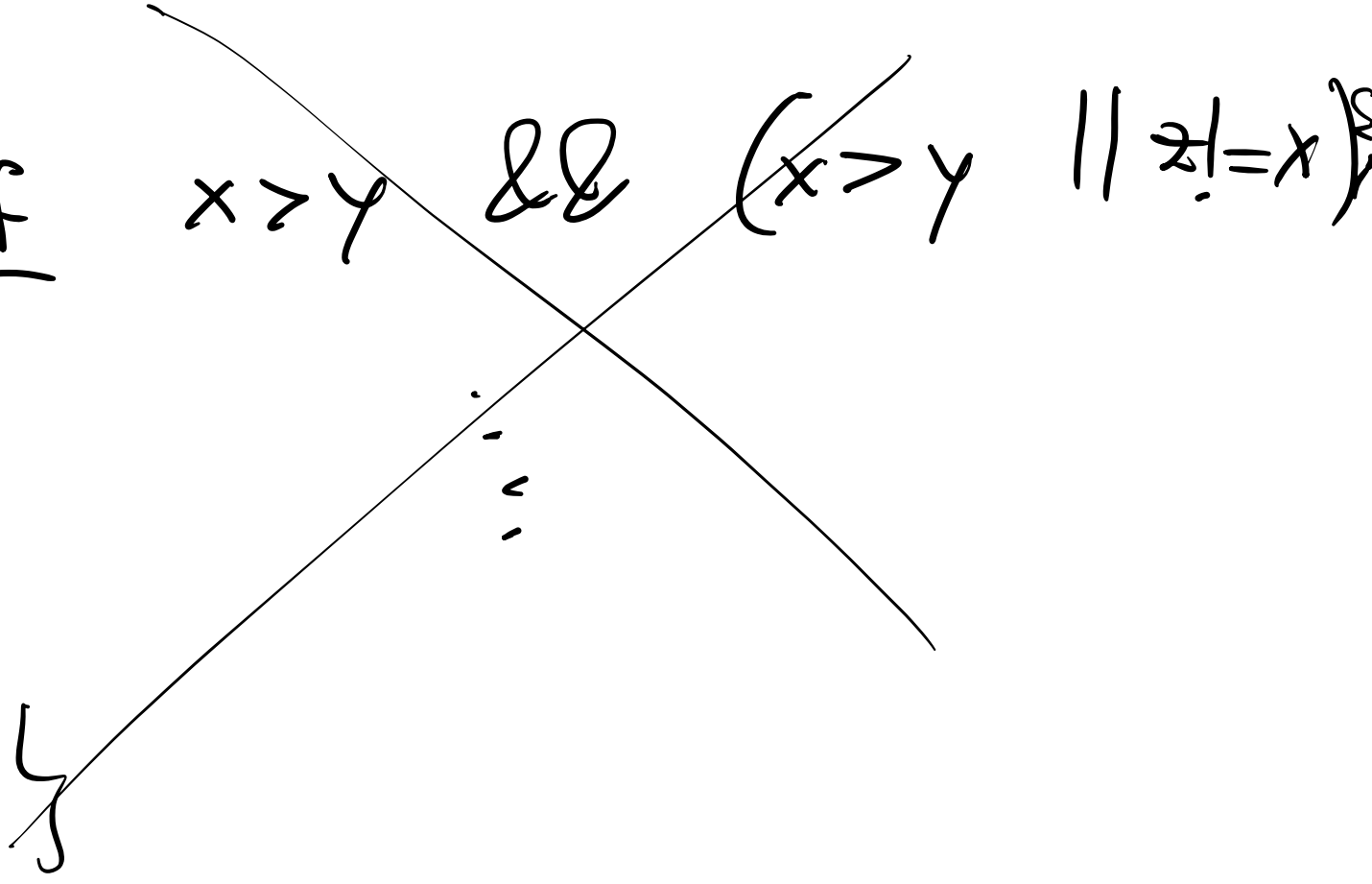
b6 := (b1 && b2) == (b2 && b1)

b7 := ((b1 && b2) && b3) == (b1 && (b2 && b3))

Leggi di assorbimento

$$a \;\&\&\; (a \;||\; b) == a$$

$$a \;||\; (a \;\&\&\; b) == a$$



if $x > y$ && $(x > y \;||\; x != x)$ {

:

}

if $x > y$ {

:

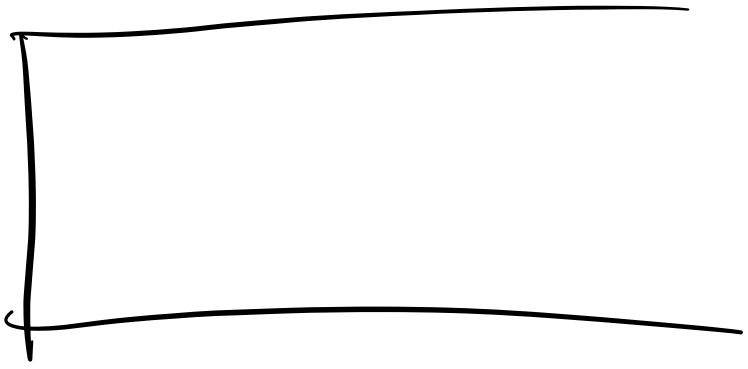
}

Legge di De Morgan

1. $!(a \;\&\&\; b) == (!a) \;||\; (!b)$

2. $!(a \;||\; b) == (!a) \;\&\&\; (!b)$

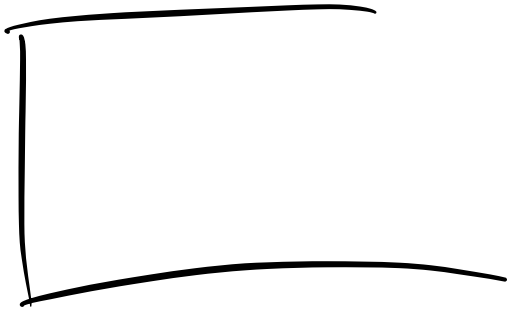
if ! (x>5 || y<=x) {



}

||

if x<=5 && y>x {



}

- Applicare la legge di De Morgan 2

$$!\,(x*x>2 \;\&\&\; (x>0 \,||\, y<0))$$

↓

$$\underbrace{!(x*x>2)}_{x*x<=2} \;||\; !(x>0 \,||\, y<0)$$

$$x*x<=2 \;||\; (!(x>0) \;\&\&\; !(y<0))$$

$$x*x<=2 \;||\; (x<=0 \;\&\&\; y>=0)$$

```
var x, y int
....
var b bool
b1= (x>y) || (y*y > x+7)
b2 = x + y > x * y && x<7
fmt.Println(b1, b2)
if b1||b2{
    ---
} else {
    ---
}
```