LINGUAGGIO C

PROBLEMA → ALGO. → SOLUZIONE

COMPILATORE

EDITING → FILE SORGENTE → FILE ESEGUIBILE → ESECUZIONE

(DEVC++)

(IDE)

(.c)

(.exe)

VARIABILI C

- a

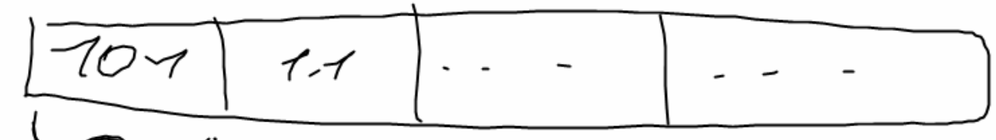
// DEFINIZIONE O DICHIARAZIONE DI VARIABILE

int a;

TIPO DI VARIABILE

NOME VARIABILE

FINE ISTRUZIONE

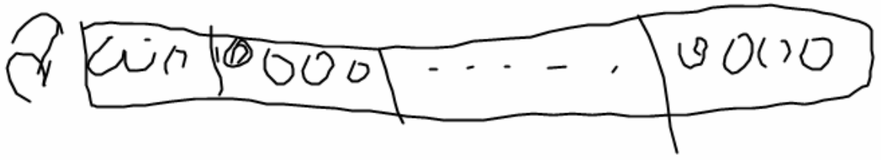


1 byte = 8 bit

- a=0

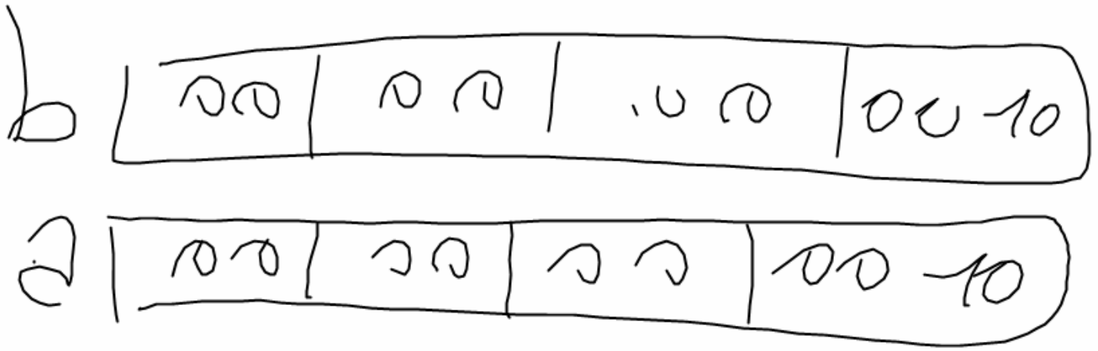
int a=0;

// INIZIALIZZAZIONE



```
b = 2
a = b
```

```
int b = 2;
int a = b;
```



TIPI VARIABILI

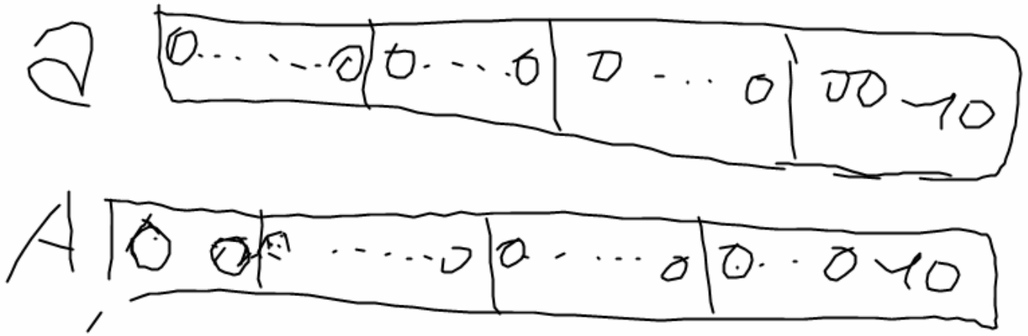
TIPI	n° BYTE	SPECIFICATORE DI FORMATO
int	4	%d
float	4	%f
double	8	%f
char	1	%c

VAR INT

int a = 2;

- int → TIPO VARIABILE
- a → NOME VARIABILE
- = → ASSEGNAMENTO AD a DI 2
- ; → TERMINATORE DELL'ISTRUZIONE

int A = 2;



TIPO FLOAT (DOUBLE)

```
float x = 3.5;
```
⟶ 3,5000000

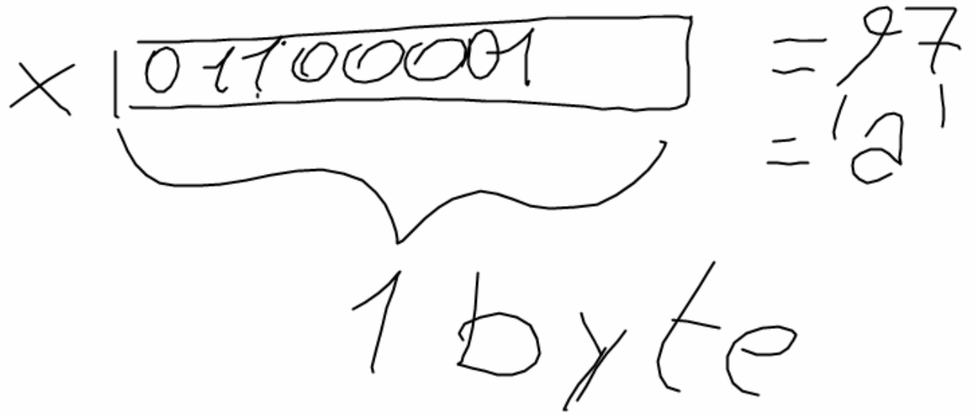
```
float y = 6;
```
⟶ 6,0000000

```
int a = 2;
float b = a;
```

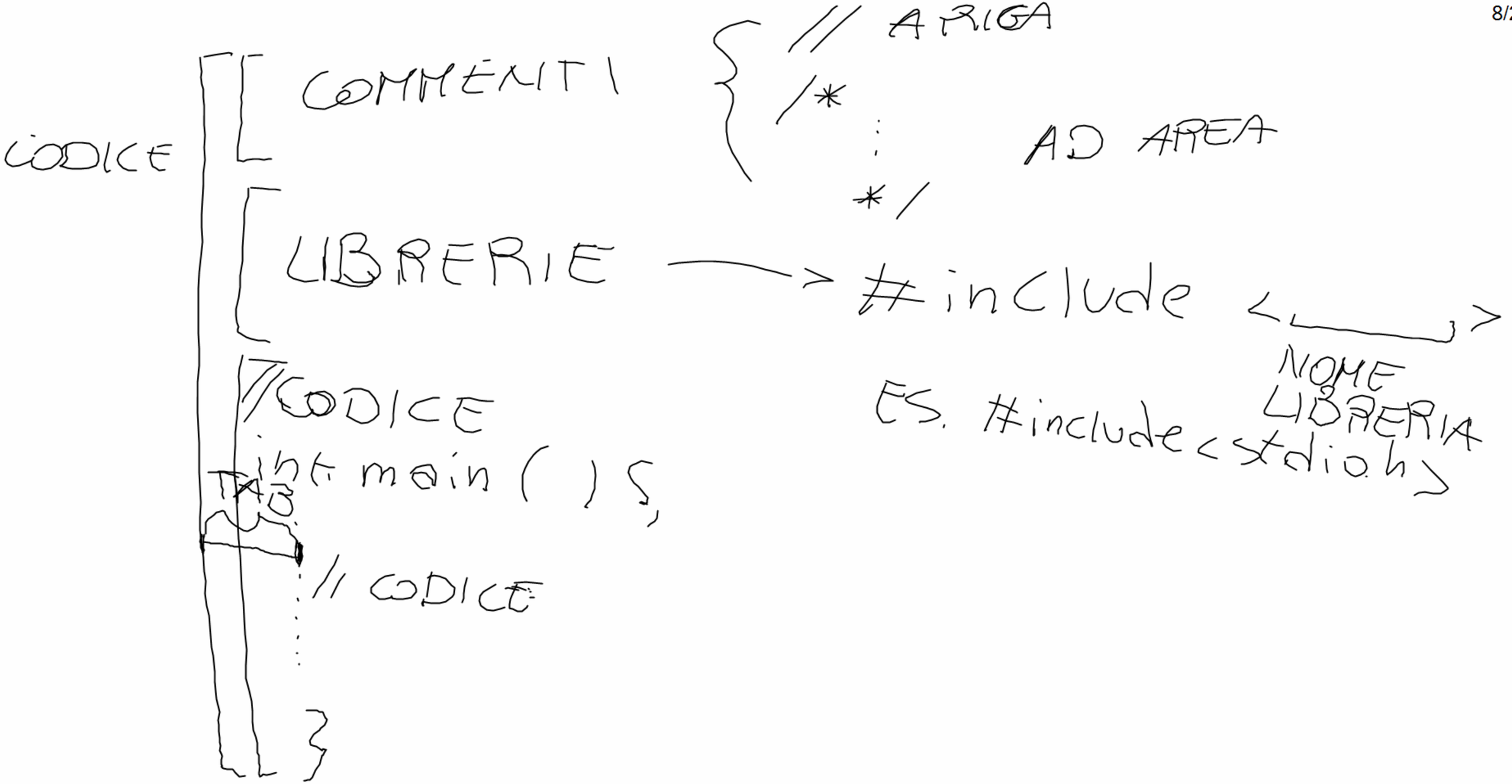
```
float a = 3.5; → 3,500000
int b = a; → 3
```

TIPO CHAR

```
char x = 'a';
```




```
char y = '2';
int z = 2;
```


CODICE
COMMENTI
// ARIGA
/*
AD AREA
*/
LIBRERIE
#include < >
NOME LIBRERIA
ES. #include<stdio.h>
//CODICE
int main ( ) {
TAB
// CODICE
}

FUNZIONE printf (STAMPA)

(OUTPUT)

```
#include<stdio.h>
int main() {
    int b=3;
    int a=2;
    printf("%d", a);
    printf("numero: %d", a);
    printf("num1: %d e num2: %d\n", a, b);
    printf("ciao!");
}
```

$x = 3$

$f(x) = x^2$

$f(3) = 3^2$

$\Downarrow$

$= 9$

```
int a = 2;
int b = 3;
printf("%d\n", a * b);
```

COSTANTI

- #define nomeVal Valore (;)
(SOTTO LIBRERIE)
Es. #define PIGRECO 3,14

- const TIPOVARIABILE NOMEVARIABILE = VALORE;
Es. const int val = 3;
const float pi = 3,14;

OPERATORI MATEMATICI

\+ , − , * , / , %

```
int a = 2;
int b = 3;
int c;
c = a + b;
```

ASSEGNAZIONE

```
c = a - b;
c = a * b;
c = a / b; // 0
```

```
c = a % b; // 2
c = b / a; // 1
c = b % a; // 1
```

a % 2 == 0

PARTE INTERA

a : b =

2 : 3 = 0,666...

20

20

2

E.5

```
int a=3;
int b=3;
int c;
c=a+b; //c=5
a=c+b; //a=8
c=c*2; //c=7
```

```
int b = 1;
int a = 2;
```

OPERAZIONI COMPATTE

```
a = a + 2;   ---->   a += 2;

a = a - 2;   ---->   a -= 2;

a = a * b    ---->   a *= b;

a = a / b    ---->   a /= b;
```

INCREMENTO e DECREMENTO

INCREMENTO

a = a + 1;

- a++; POST INCRE.
- ++a; PRE INCREMENTO

DECREMENTO

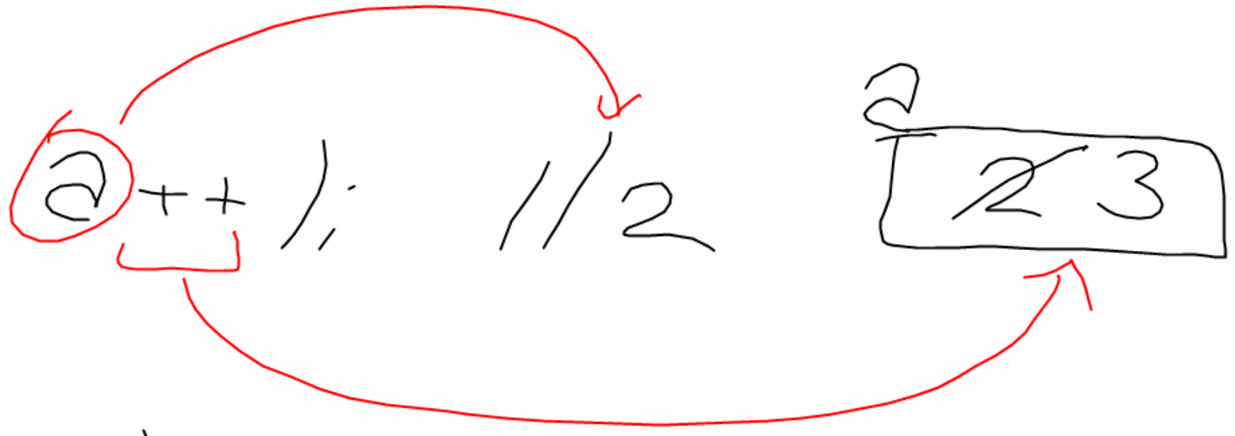
a = a - 1;

// a -= 1;

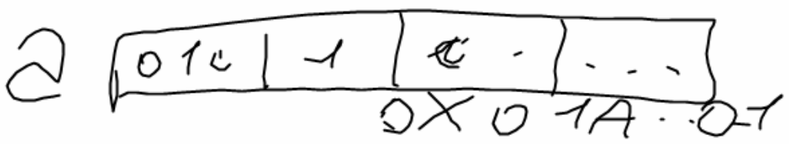
- a--; POST
- --a; PRE

Es.

```
int a = 2;
printf("%d ", a++); //2
printf("%d ", ++a); //4
```



FUNZIONE DI INPUT (scanf();)




```
int a;
printf("inserisci un valore: ");
scanf("%d", &a);
int b;
scanf("%d %d", &a, &b);
scanf("%d%d", &a, &b);
```

INDIRIZZO PER LA VARIABILE a

CAST

```
float a = 3.5; // 3,5000000
int   b = a;   // b = 3
float c = b;   // c = 3,0000000
```

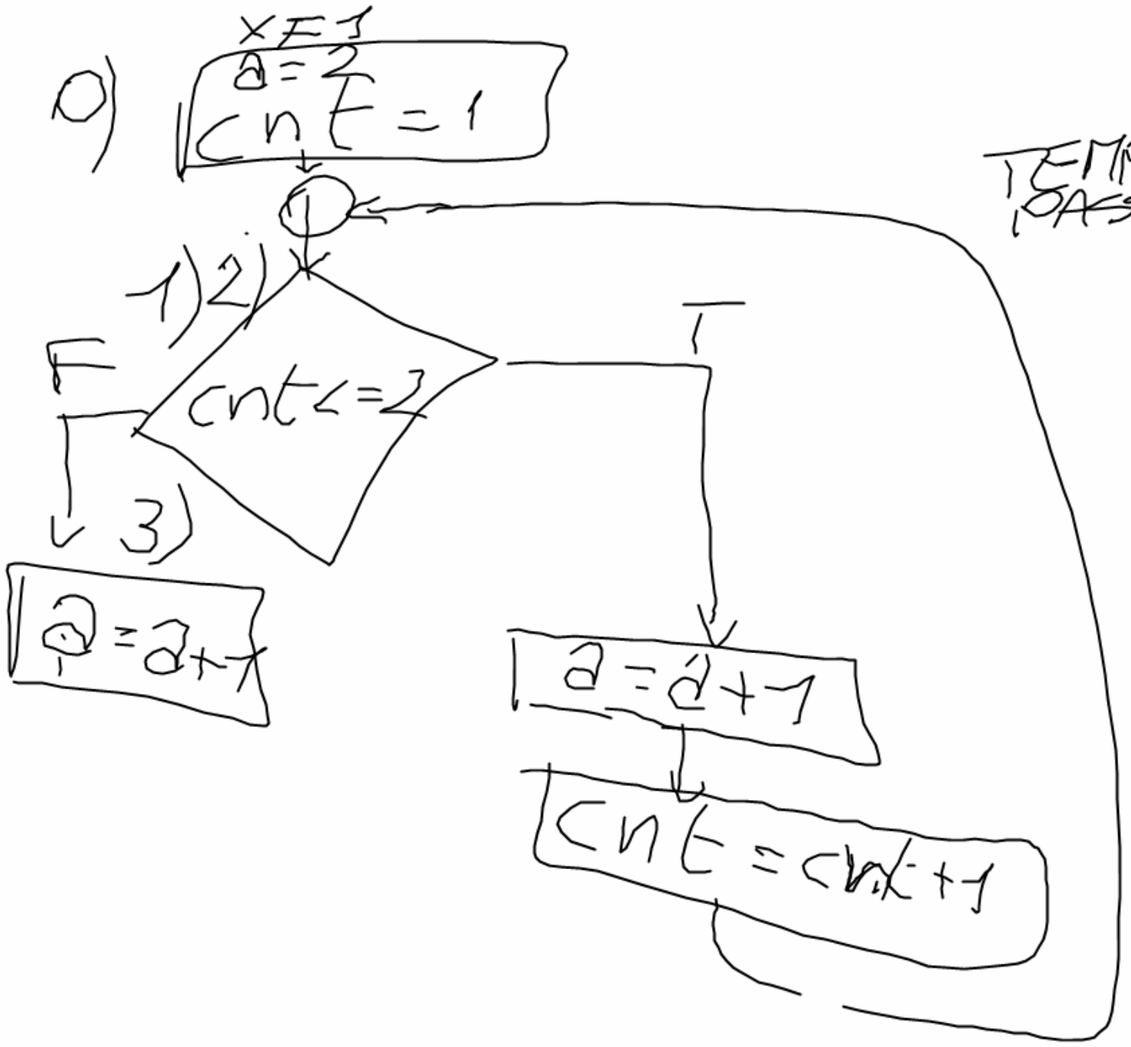
CAST IMPLICITO

```
Float a = 3.5;
int b = (int) a;
Float c = (Float) b;
```

CAST ESPLICITO

SPECIFICATORI DI FORMATO

TIPO	OUTPUT	INPUT
int	%d	%d
float	%f	%f
double	%f	%lf
char	%c	%c



TRACE TABLE

TEMPO/PASSI	a	cnt	x
0	2	1	1
1	3	2	1
2	4	3	1
3	5	3	1

ES

1) int x;
2) x = 6;
3) float y;
4) y = 6.2347;
5) float z;
6) z = y + (float) x;
7) x = z;

ES

(x%2==0) AND (x>10)