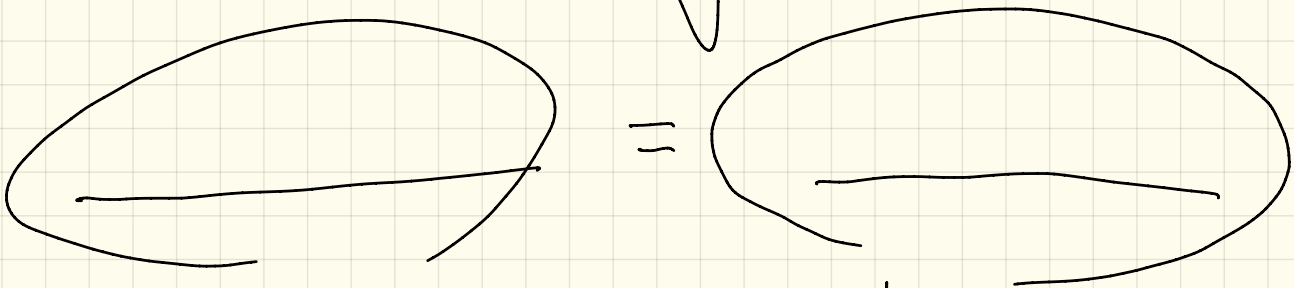
Monday Jan. 15

Lecture 2

Assignment

change value



① int i
final double PI

② i =

any expr. with LRS
whose value is com.

① int i = 23 * 4;   [92]

final double PI = 3.14;

[200]

---

② int j = i * 2;   [92]

i = 100;

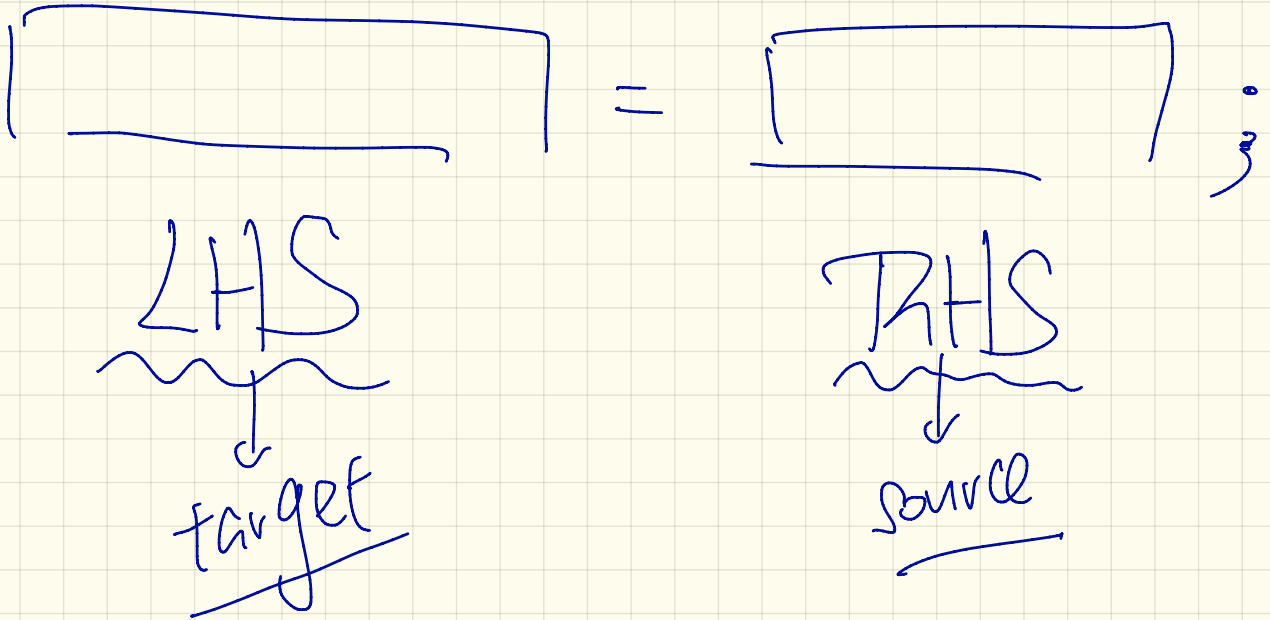
j = i * 2;   [200]

trace

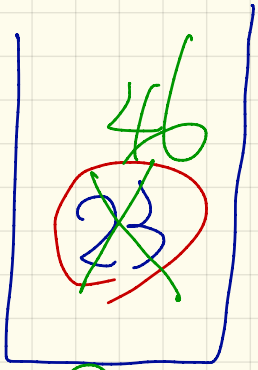
[100]

i

Assignment



int i = 23;



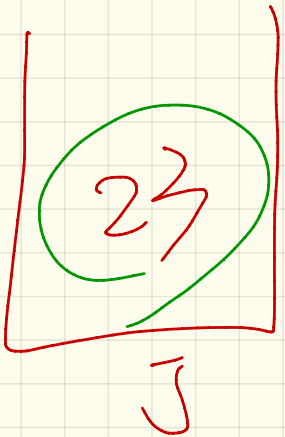
i integers only

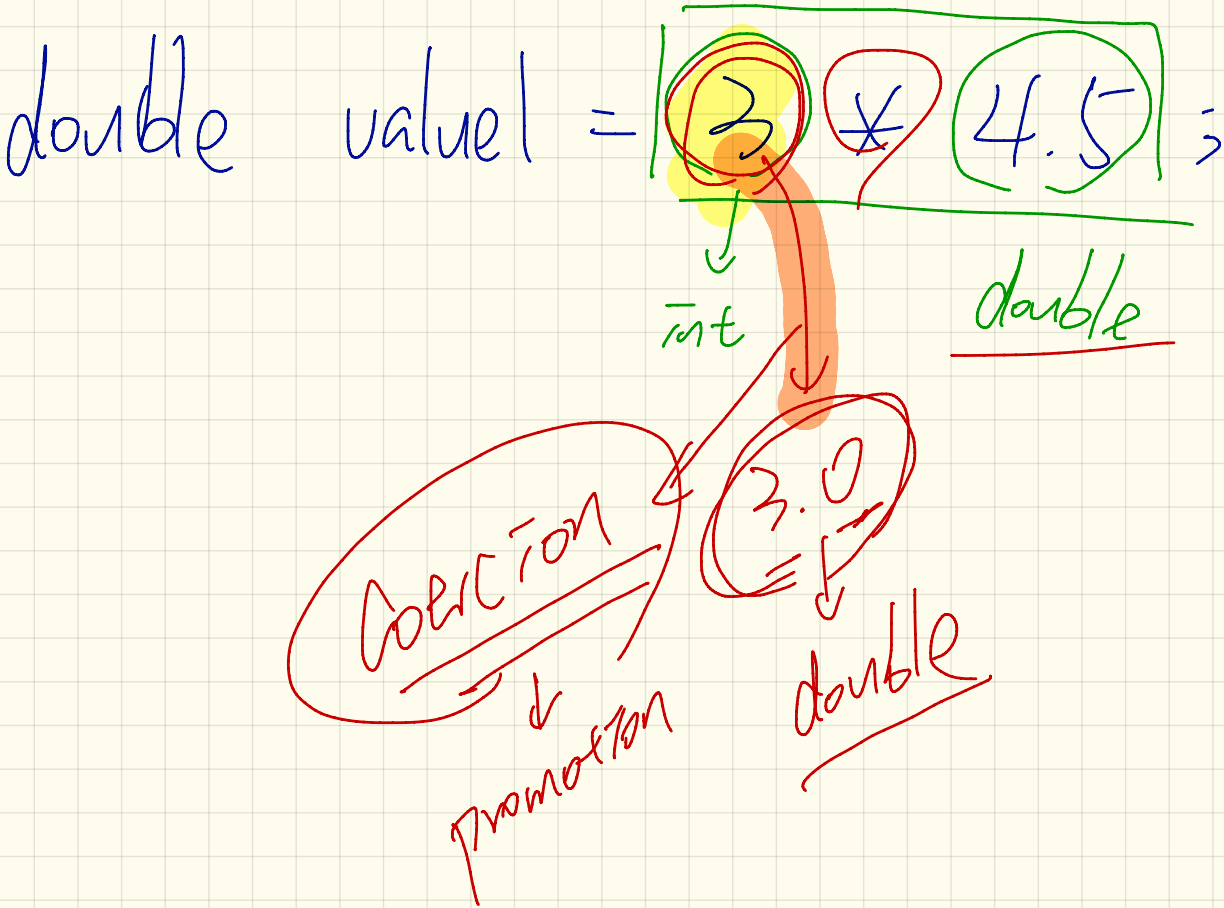
int j = i;

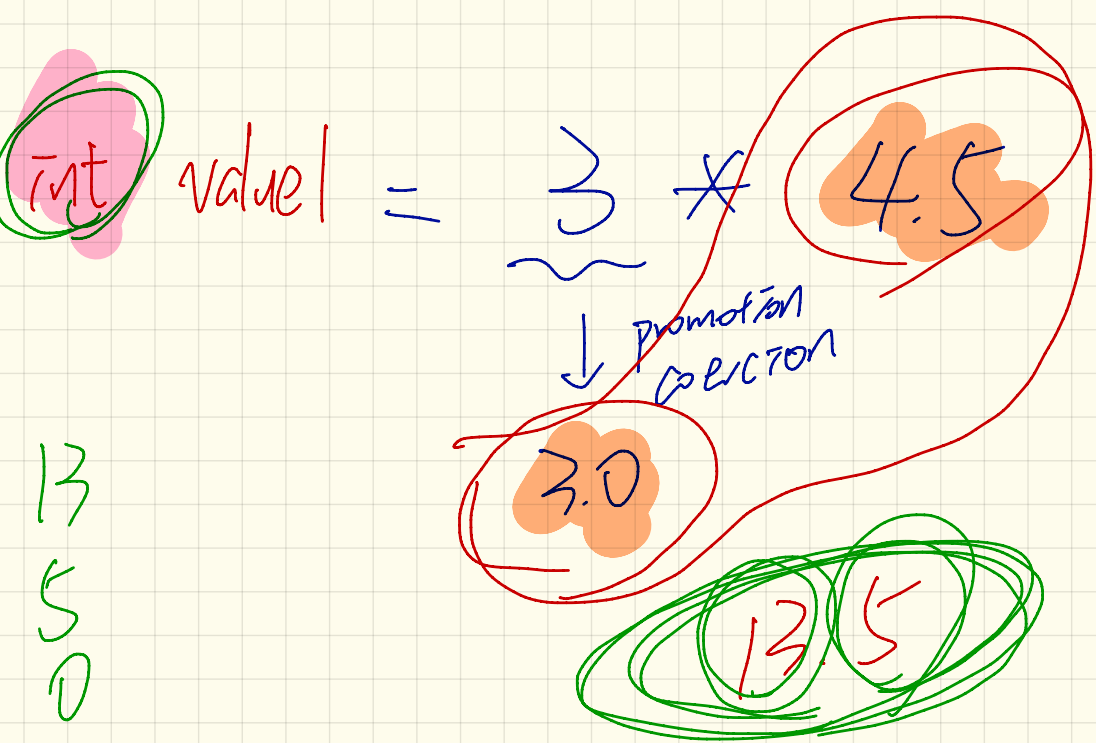
tar: j

src: i

i = 46;




double value1 = 2 * 4.5;
int
double
coercion
&
promotion
3.0
double



13

5

0

13.5 X

not compile

∵ you cannot store 13.5 into an int variable.

int value1 = 3 * 4.5;

13.5

0.5

13

int value1 = (int) 3 * 4.5;

after cast, .5 is truncated.

13

value1

① double d = 23;

23.0

d

② ~~int~~ int i = 46.23;

int i = (int) 46.23;

46

i

println(1 / 2); 0 (%)

int int quotient

1.0 / 2

println((double) 1 / 2); 0.5

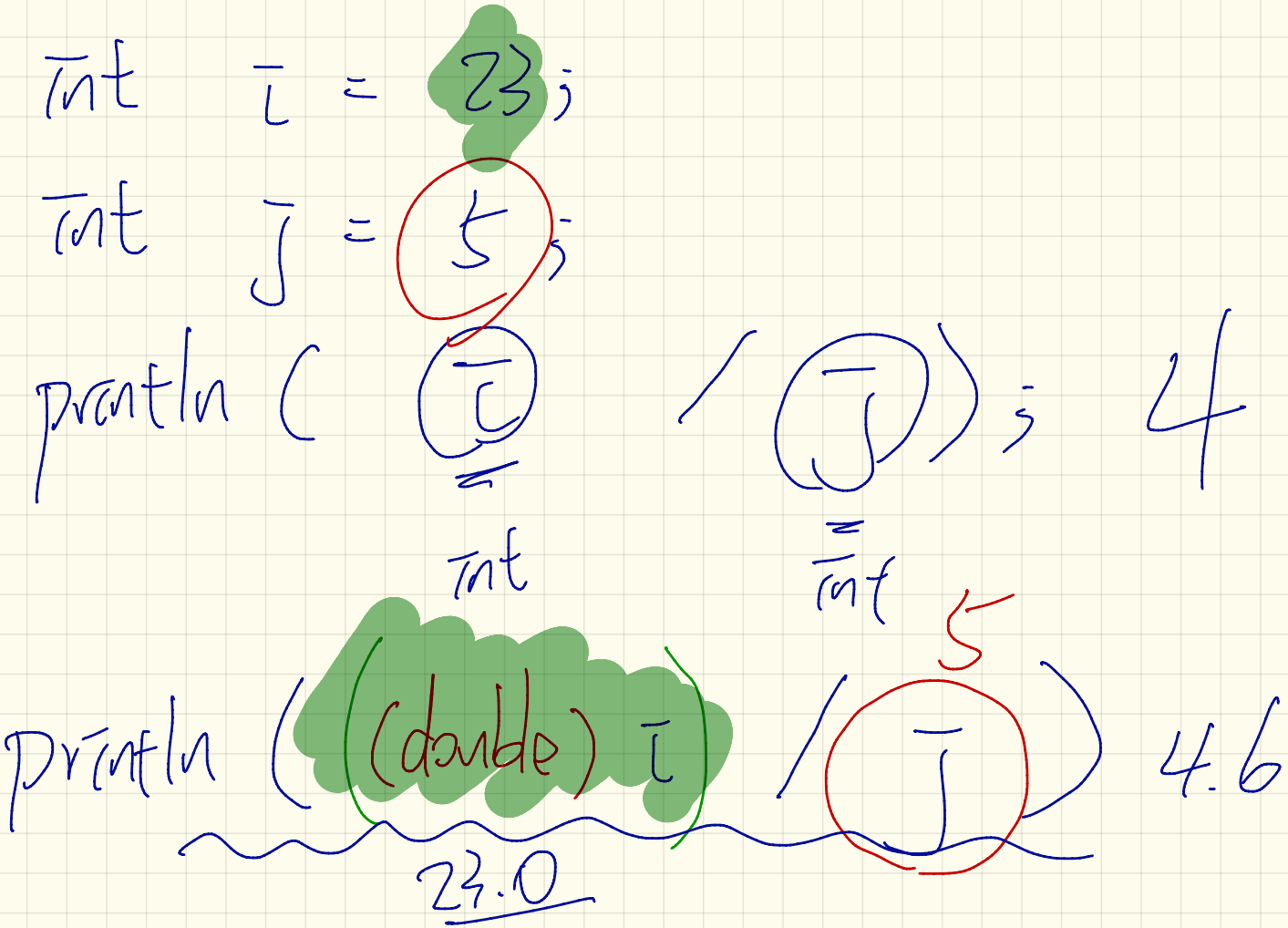
1.0

println(1 / (double) 2); 0.5

2.0

println((double) 1 / (double) 2); 0.5

1.0 2.0


int i = 23;
int j = 5;
println (i / j); 4
int
int
println ((double) i / j) 4.6
5
23.0

int i = 10;

int j = 4;

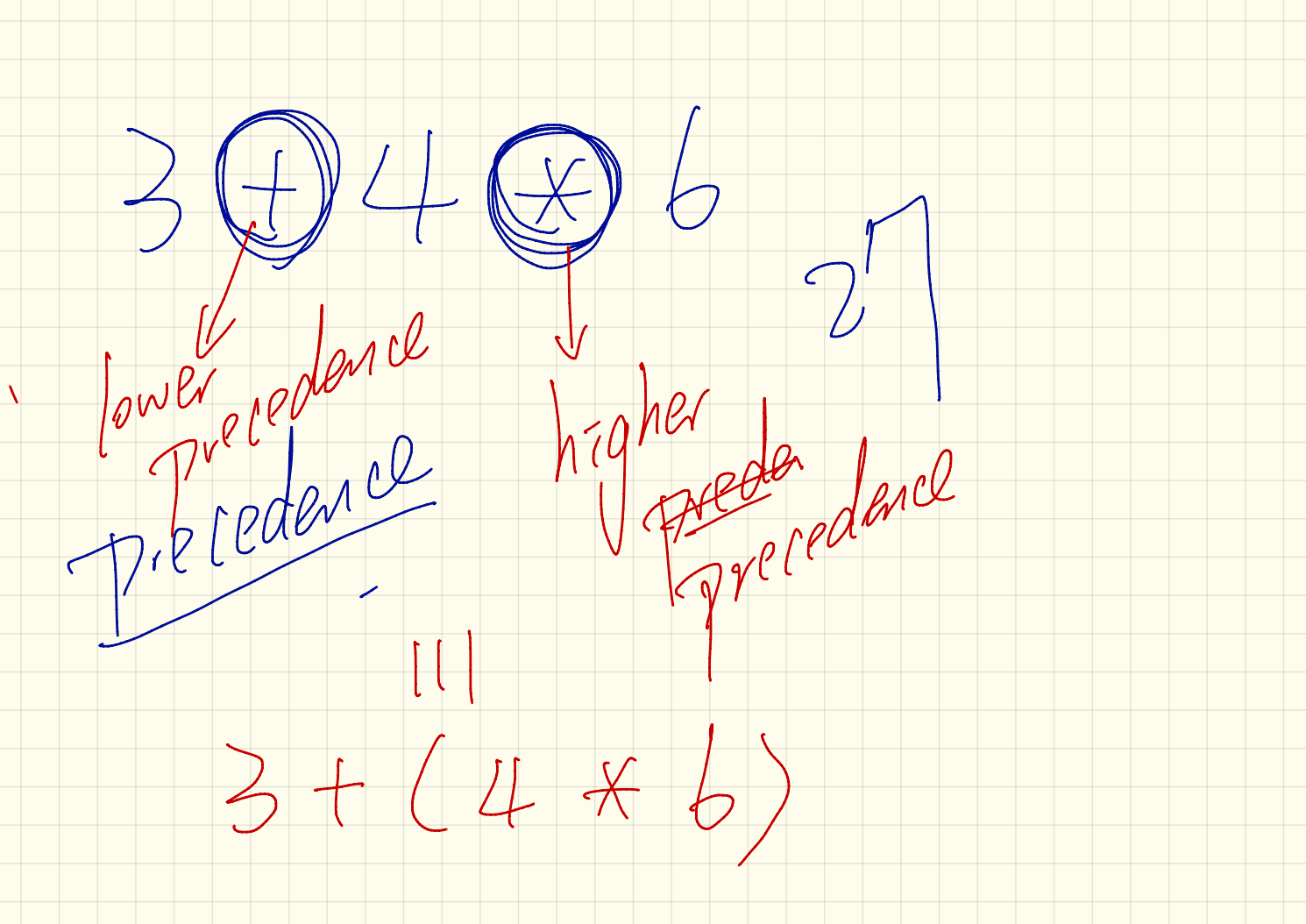
Casting has higher precedence than arithmetic operation.

① println((double) i / j); 2.5

② println((double) (i / j)); 2.0

2

(3+4) * b


3 + 4 * 6
27
lower precedence
higher precedence
precedence
3 + (4 * 6)

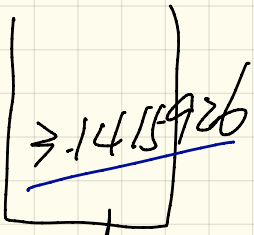
```
int i = 10;
int j = 4;
println( (double) i / j );
```

2.5

```
println( ((double) i) / j );
```

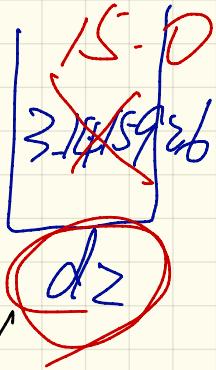
Trace.

① double d1 = 3.1415926;



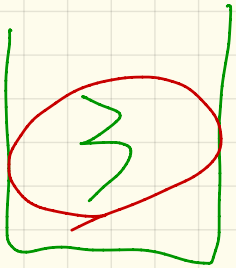
println(d1); // 3.1415926

② double d2 = d1;



println(d2); // 3.1415926

③ int i1 = (int) d1;



println(i1); // 3

④ d2 = i1 * 5;

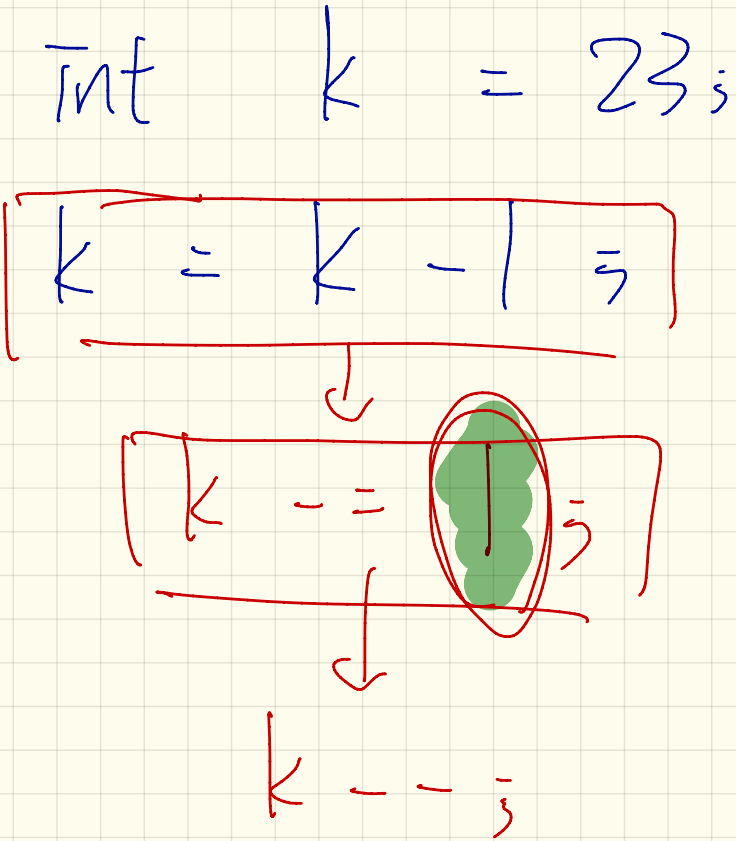
println(d2); 15.0

```
int i = 23;
i = i + 46;
```

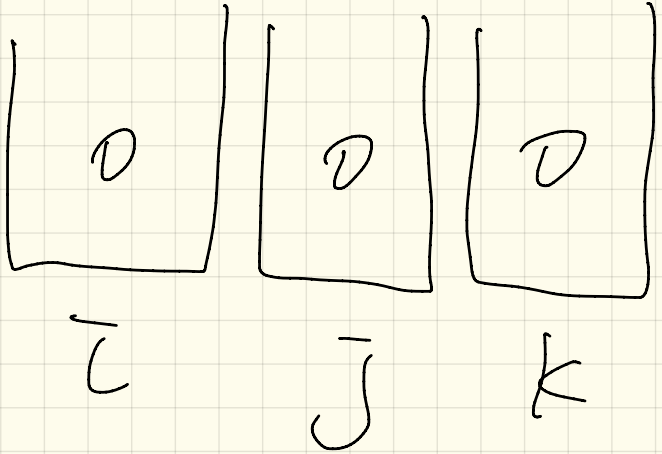
```
i += 46;
```

```
int j = 46;
j = j * 2;
```

→ `j *= 2;`


int k = 23;
k = k - 1;
k--;
k--;

```
int i = 0;
int j = 0;
int k = 0;
```



```
k = i++;
```

```
k = ++j;
```

```
k = i++;
i++;
```

```
k = ++j;
j++;
```

Selections

① `int i = 23;`

`if ( i > 0 ) {`

boolean expression

`}`

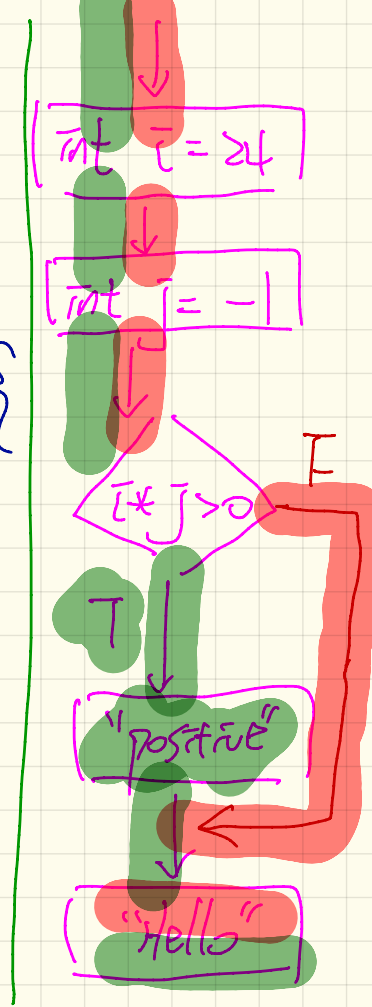
② `int j = -24;`

`if ( j > 0 ) {`

`}`

e.g.

```
int i = 24;
int j = -1;
if (i * j > 0) {
    println("positive");
}
println("Hello");
```



Hello

positive
Hello

```
int i = 3;
int j = -1; 4
if (i * j > 0) {
    println("positive");
} else {
    println("negative");
}
println("Hello");
```