

boolean Expression

1. **boolean ans = 3>2 && 14>3** → True

2 **boolean ans = 40>3 && 40>50** → False

3 **Boolean ans =
40>=40 || 50>=2*25** → True
OR T/F

→ left to right

4 **Boolean ans =
(2*3==4 && 6*4==9) || (4>2)** → Bracket have
F higher precedence
False || true → True

5 **Boolean ans =
(4>5) && (3>5 && 80==2*40)** → false
F T/F

→ print(ans);

6 **Boolean ans =
(20*5==100 || 10==10) &&
(30*2==60 || 40>30)** → True
True & True
60 == 60 → True
true

- T → with OR Creates short circuiting
- F - with AND || &&

7 Boolean ans = $!(\underline{30} > \underline{20})$ → false
T

8 Boolean ans = $!(\underline{30} == \underline{30})$ → false
+

9 Boolean ans =
 $!(\underline{30} >= \underline{20}) \quad || \quad \underline{40} >= \underline{10})$ → false
true

10 Boolean ans =
 $!(\underline{20} * \underline{4} + \underline{40} >= \underline{100}) \quad || \quad \underline{20} == \underline{10}) \quad \&&$ False
 $(\underline{3} * \underline{2} <= \underline{60}) \quad || \quad \underline{4} >= \underline{30})$ → false

11 Boolean ans =
 $!(\underline{20 \% 3} == \underline{2})$ → false
up true
20%3 = 2
True
Quotient 6
3 20
18
2 remainder

12 Boolean ans =
 $(!(\underline{40} == \underline{40}) \quad \&& \quad \underline{80} > \underline{36})$ → false
! T → F
F
T && F
and

13. Boolean ans =
 $(!(\underline{50} > \underline{20}) \quad || \quad \underline{90} > \underline{2} * \underline{45}) \quad \&& \quad (\underline{30} != \underline{2} * \underline{15}))$
! True
False
False
left to Right

False

False

left to Right

Bodmas → Bracket >

% * / >
+ -

a. $\text{int } x = 2 + 3 \rightarrow 5$

b. $\text{int } x = 3 + 8 - 29 \rightarrow -18$

c. $\text{int } x = 4 + 5.2 - 8.3 + 9.2 //$
conversion

d. $\text{double } x = 4.1 + 8.9 + 3.5 \rightarrow 4.1 + 8.9 + 3.5 = 16.5$

e. $\text{int } x = \underline{\underline{4 * 3}} / 8 + 2.5 * 2 //$
conversion

f. $\text{double } x = 22 + 4 * 2$

g. $\text{double } x = 8 / 5 + 13 / 2$

h. $\text{double } x = 8.0 / 5 + 13 / 2$

i. $\text{double } x = 8.0 / 5 + 13.0 / 2$

j. $\text{int } x = 392 / 10 \% 10 / 2$

k. $\text{int } x = 39 \% 2 * 3$

$\rightarrow 4 + 5.2 - 8.3 + 9.2 = 10.0$

$\rightarrow 9.2 - 8.3 + 9.2 \Rightarrow 9 + 9.2$

$4.1 + 8.9 + 3.5 = 16.5$

$4 * 3 / 8 + 2.5 * 2$

$\underline{\underline{12 / 8}} = \underline{\underline{1 + 2.5 * 2}}$
 $2.5 * 2 = 5$
 $= 1 + 5 = 6$

f. $\text{double } x = 22 + 4 * 2 \rightarrow 22 + \underline{\underline{4 * 2}} = 30.0$

g. $\text{double } x = \underline{\underline{8 / 5}} + \underline{\underline{13 / 2}} \rightarrow \underline{\underline{1}} + \underline{\underline{6}} = \underline{\underline{7.0}}$

h. $\text{double } x = \underline{\underline{8.0 / 5}} + \underline{\underline{13 / 2}}$

i. $\text{double } x = \underline{\underline{8.0 / 5}} + \underline{\underline{13.0 / 2}} = 1.6 + 6.5$

j. $\text{int } x = 392 / 10 \% 10 / 2$

k. $\text{int } x = 39 \% 2 * 3$

$22 + 4 * 2 = 30.0$

$1 + 6 = 7.0$

$1.6 + 6.5 = 8.1$

$5 \sqrt{8.0} = 1.6$

1.6

30

x

$$5 \sqrt{8} = 1.6$$

$$5 \sqrt{8.0} = 1.6$$

$39 \% 10$

left to right

j. $\text{int } x = 392 / 10 \% 10 / 2$

k. $\text{int } x = 39 \% 2 * 3$

$9 / 2 = 4$

k. int x= 39%2*3

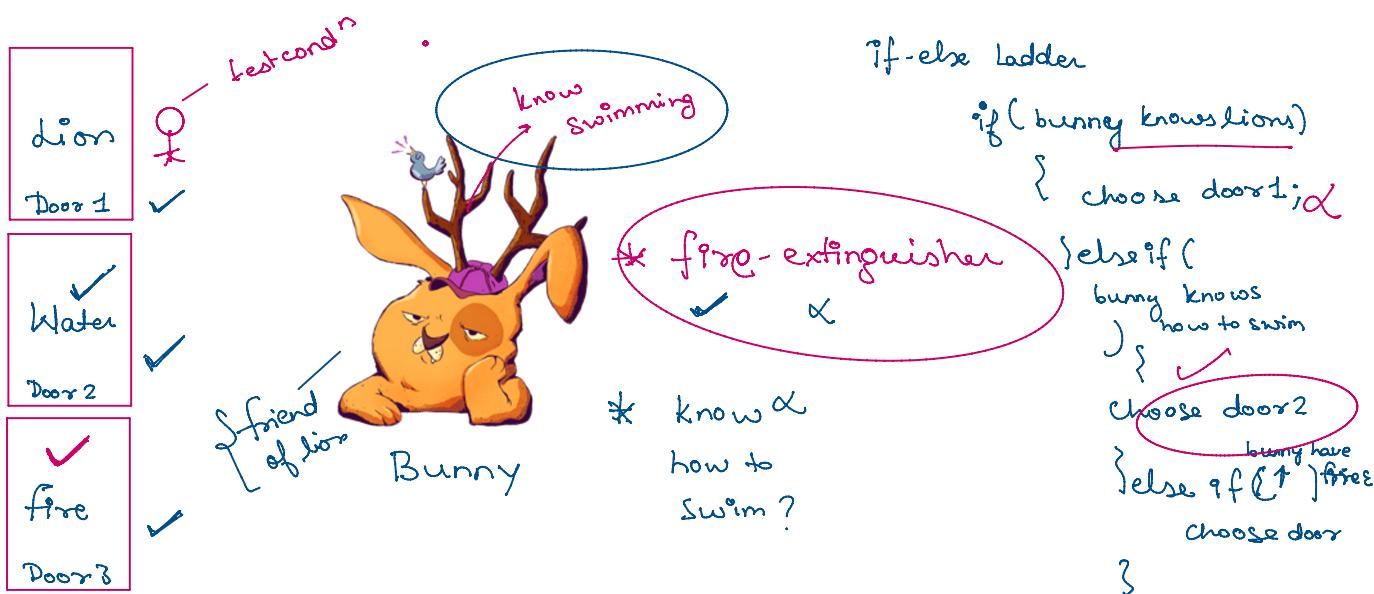
$$9/2 = 4$$

$$\begin{array}{r} 10 \sqrt{39} \\ \underline{30} \\ \underline{9} \end{array}$$

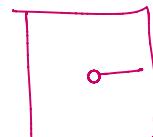
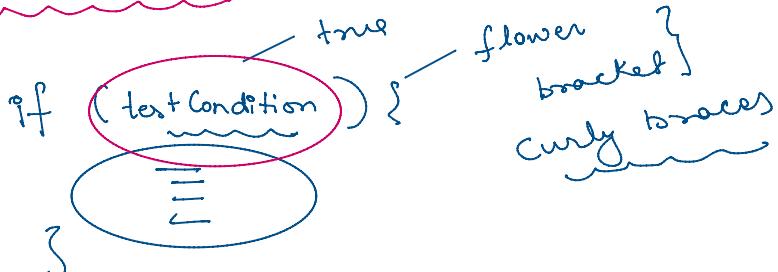
$$\begin{array}{r} 1 * 3 = 3 \\ 2 \sqrt{39} \\ \underline{2} \\ \underline{19} \\ 18 \\ \underline{1} \end{array}$$

remainder

Decision Making



'if' - statement



```

int number = 12;
if(number > 0) { true
    System.out.println("Positive Number");
}

```

```
System.out.println("Code outside the if statement");
```

depends Positive Number
on if Code outside the if Statement
Statement

```
System.out.println("Code outside the if statement");
```

Statement

Statement

```
int number = -12;  
if(number > 0){  
    System.out.println("Positive Number");  
}  
} skip
```

```
System.out.println("Code outside the if statement");
```

~~if~~ if - else

```

graph TD
    If((test condn)) -- true --> TrueBlock
    If -- false --> FalseBlock
    If ==> SkipBlock

```

else {

— skip

— run

2

Door 1

Door 2

Body Guard

≤ 18

Playground

```
int number = -12;  
if(number > 0){ → false  
    System.out.println("Positive Number");  
}else{ → number ≤ 0  
    System.out.println("Negative Number");  
}  
} } skip
```

Universal

only one Statement within a particular time

~~# if-else ladder~~

if (test cond') {
 }

} else if (test condn ✓) {
 &

1

{ else {

every cond'n rejected

```

    } : v
} else {
}

```

definitely
run if every
above cond rejcted

```

int number = 0;
if(number > 0){
    System.out.println("Positive Number");
}else if(number == 0) {
    System.out.println("Zero");
}else{
    System.out.println("Negative Number");
}

```

```

int number = 15;
if(number % 2 == 0){ false
    System.out.println("Even Number");}
}else{
    System.out.println("Odd Number");
}

```

skip

number % 2 == 0 }

↳ even no.

number % 2 != 0 }

number % 2 == 1 }

remainder

1 → odd no.

Challenges

Even or not

Problem	Submissions	Leaderboard	Discussions
---------	-------------	-------------	-------------

You have to take an integer and print true if it is an even number and false otherwise.

Solved: 67

Attempted: 75

Input Format

For each test case, you will be given an integer input.

```

Scanner scn = new Scanner(System.in);
int num = scn.nextInt(); — 23
if(num % 2 == 0){ → 23% 2 == 0
    System.out.println(true); skip
}else{
    System.out.println(false);
}

```

Adult or not 1

Problem

Submissions

Leaderboard

Discussions

You will be given the age as an integer input, you need to print "Adult" if the age is greater than or equal to 18 and print "Below age" if the age is below 18.

• int age → input test condn → $age \geq 18$
check with if - else

```

Scanner scn = new Scanner(System.in);
int age = scn.nextInt();

if(age >= 18){
    System.out.println("Adult");
} else{
    System.out.println("Below age");
}
System

```

High Sum or Low Sum

Problem

Submissions

Leaderboard

Discussions

You will get two integers as input, you need to print "High Sum" if sum is greater than or equal to 100, and print "Low Sum" otherwise.

Sample Input 0

40 } x
70 y

$$\text{Sum} = x + y$$

if ($\text{sum} > 100$)
print ("High Sum");
else

Sample Output 0

High Sum

```
Scanner scn = new Scanner(System.in);
int x = scn.nextInt(); 35
int y = scn.nextInt(); 40
int sum = x + y; 35+40 = 75

if(75 > 100){ false
    System.out.println("High Sum"); skip
} else{
    System.out.println("Low Sum"); → Low Sum
}
```