

S.O.P → System.out.print

SOPln → System.out.println

if (age >= 18) {

S.O.P ("Yes, you can vote"); // L1

} else {

S.O.P ("You are not allowed"); // L2

}

Can else exist without an If ? No

Error else {

}

If can exist without an else. → true

```
[ if ( 5 > 3 ) {  
    S.O.P (" 5 is bigger");  
}
```

Ques. Given an integer, categorise it in positive, negative or zero.

$n = 10 \rightarrow$ Positive

$n = 0 \rightarrow$ Zero

$n = -25 \rightarrow$ Negative

```
int n = scn.nextInt();  
if ( n > 0 ) {  $\rightarrow 15 > 0$  (true)  
    S.O.P ("Positive");  
}  
if ( n < 0 ) { (false)  
    S.O.P ("Negative");  
}  
if ( n == 0 ) { (false)  
    S.O.P ("Zero");  
}
```

```
int n = scn.nextInt();  
if ( n > 0 ) {  
    S.O.P ("Positive");  
}  
else if ( n < 0 ) {  
    S.O.P ("Negative");  
}  
else {  
    S.O.P ("Zero");  
}
```


Syntax →

if (condition 1) { (true)

→ // code to run when condition 1 is true

condition 1 is
false →

} else if (condition 2) { → true

// when condition 1 is false and
condition 2 is true

} else {

// when all the conditions are false

}

if (n > 0) {

0 > 0 (false)

n = 15 ✓

Positive

S.O.P ("Positive");

}

→ else if (n < 0) {

0 < 0 (false)

n = -25 ✓

Negative

S.O.P ("Negative");

→ } else {

→ S.O.P ("Zero");

}

n = 0 ✓

Zero

if (condition) {

// when condition is true

} else {

// when condition is false

}

```
if ( c1 ) {
```

```
    { else if ( c2 ) {
```

```
        { else if ( c3 ) {
```

```
            { else if ( c4 ) {
```

```
                {
```

Can your else-if
exist without If

No


```
if (true) {  
    → S.O.Pm ("1");
```

```
}
```

```
→ if (true) {  
    → S.O.Pm ("2");
```

```
}
```

```
→ if (true) {  
    → S.O.Pm ("3");
```

```
}
```

independent of each
other

Output →
1
2
3

```
→ if (true) {  
    → S.O.P in ("1");  
}  
else if (true) {  
    S.O.P in ("2");  
}  
else if (true) {  
    S.O.P (" 3 ");  
}  
}
```

dependent on each
other

Output → 1

Ques. Given the percentage, print the respective grade

$p \geq 90\%$ \rightarrow Grade A

$p \geq 80\%$ but $p < 90 \rightarrow$ Grade B

$p = 50$

\rightarrow Grade E

$p \geq 70\%$ but $p < 80 \rightarrow$ Grade C

$p \geq 60\%$ but $p < 70 \rightarrow$ Grade D

$p = 89$

Grade B

$p \geq 40\%$ but $p < 60 \rightarrow$ Grade E

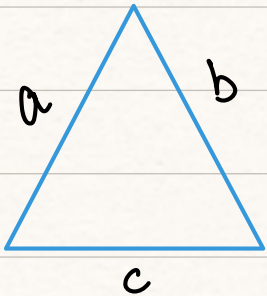
$p < 40\%$ \rightarrow Grade F

Ques. Categorise triangle on the basis length of sides

equilateral \rightarrow when the length all sides are equal

isocoles \rightarrow when length of any 2 sides are equal

Scalene \rightarrow when length of all sides are different



$$a = 20$$

$$b = 20$$

$$c = 20$$

Equilateral

$$a = 7$$

$$b = 12$$

$$c = 9$$

Scalene

$$a = 5$$

$$b = 13$$

$$c = 5$$

Isocoles

$$a = 10$$

$$b = 7$$

$$c = 7$$

Isocoles

false
if $((a == b) \&\& (b == c))$ {

S.O.P ("Equilateral");

}

→ else if $((a == b) || (b == c) || (c == a))$ {

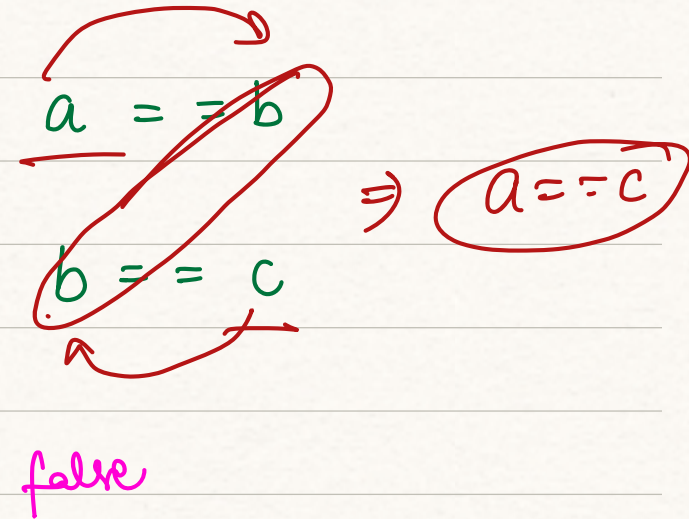
S.O.P ("Isocoles");

}

else {

→ S.O.P ("Scalene");

}



$a = 5$

$b = 7$

$c = 1$

Scalene

Ques. Given three integers, print the largest among them.

$a = 7$ $b = 20$ $c = 50$ $\rightarrow 50$

$a = 10$ $b = 10$ $c = 5$ $\rightarrow 10$

$a = 40$ $b = 40$ $c = 40$ $\rightarrow 40$

a is largest $\rightarrow a$ should be greater than or equal to b as well c

if (^{false} $(a \geq b)$ && $(a \geq c)$) {

$a=5$ $b=7$ $c=12$

12

S.O.P $(a); //$

}

true
 $7 \geq 5$

false
 $7 \geq 12$

→ else if ((b >= a) && (b >= c)) { -
S.O.P (b); . → false

}

→ else if ((c >= a) && (c >= b)) {
S.O.P (c);

}

Ques. Given an integer, print "Fizz" if the number is divisible by 3
print "Buzz" if the number is divisible by 5
print "FizzBuzz" if the number is divisible by both 3 and 5

$n = 39$ \longrightarrow Fizz

$n = 50$ \longrightarrow Buzz

$n = 15$ \longrightarrow FizzBuzz

$n = 10$ \longrightarrow Buzz

$n = 13$ \longrightarrow No output

true

if (n % 3 == 0) {

System.out.println("Divisible by 3");

n = 12

Divisible by 3

}

else if (n % 5 == 0) {

System.out.println("Divisible by 5");

n = 10

Divisible by 5

}

else if (n % 3 == 0 && n % 5 == 0) {

System.out.println("Divisible by both");

n = 30

Divisible by 3

}

if ((n % 3 == 0) && (n % 5 == 0)) {

S.O.Plu ("Divisible by both");

n = 15

Divisible by both

}

→ else if (n % 3 == 0) {

false

n = 9

Divisible by 3

S.O.Plu ("Divisible by 3");

}

→ else if (n % 5 == 0) {

true

n = 20

Divisible by 5

S.O.Plu ("Divisible by 5");

}

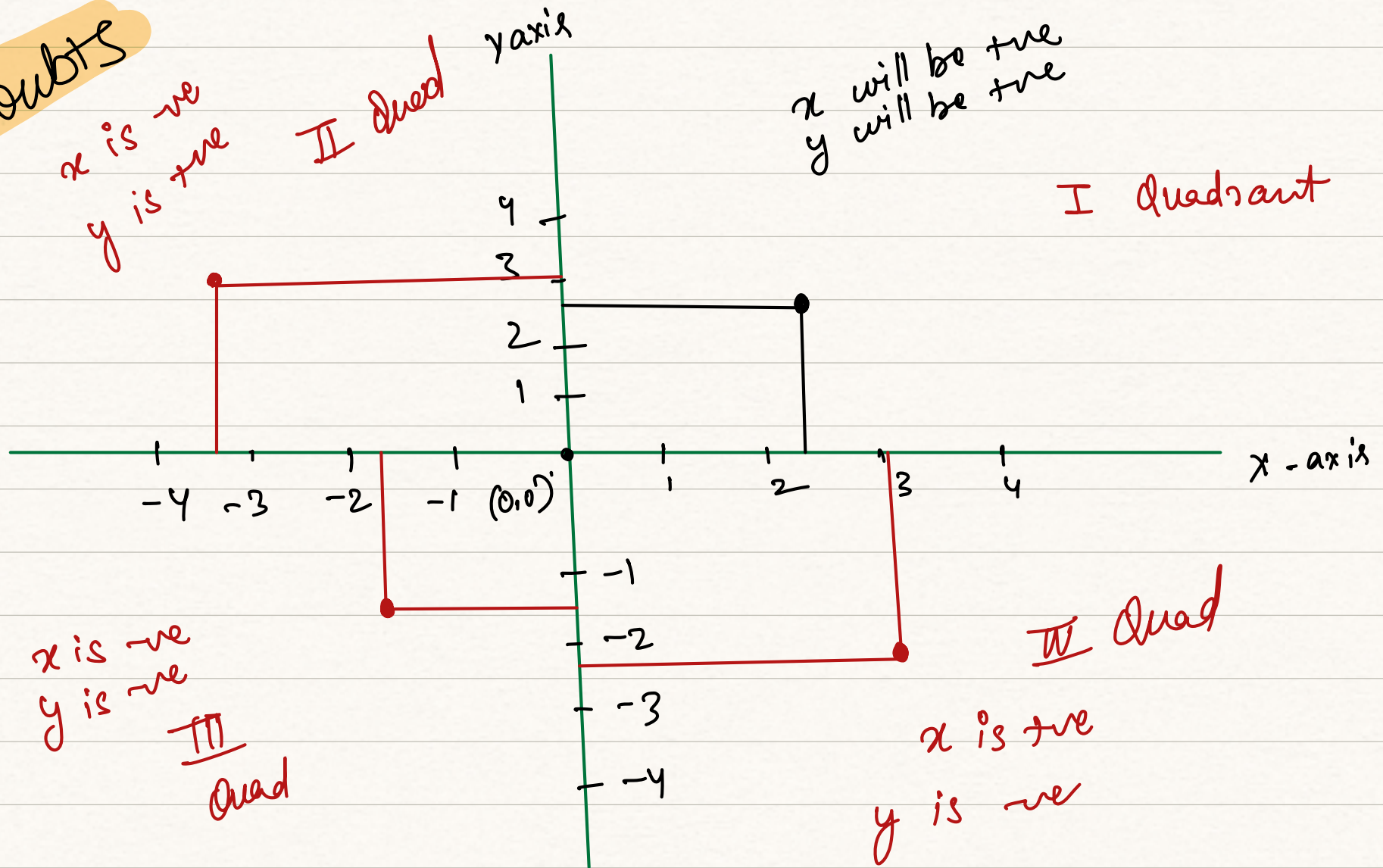
Doubts

x is $-ve$
 y is $+ve$

II Quad

x will be $+ve$
 y will be $+ve$

I Quad



if (x > 0 && y > 0) {

First

}

if (x < 0 && y > 0) {

Second

}

if (x < 0 && y < 0) {

Third

}

if (x > 0 && y < 0) {

fourth

}

$$(N/T) * 100$$

$$(N * 100) / T$$

$$N = \underline{150}$$

$$T = \underline{\underline{200}}$$

$$\frac{150 * 100}{200}$$

$$\left(\frac{150}{200} \right)$$

$$\frac{15000}{200} = 75$$

integer

0.75
↑

$$0 * 100 = 0$$

double

Post increment

int a = 10;

int b = a++; ←

→ first you will
use the a
& then increment

b = 10

b [10]

[11]
a

Pre increment

int a = 10

int b = ++a;

→ first we
will inc
and then use
the value

b = 11

[11]
a

[11]
b

if (^{true} $n \geq 0$ && ^{Even} $n \% 2 == 0$) {

}

if (^{true} $n \geq 0$ && ^{odd} $n \% 2 != 0$) {

}

if (^{-ve} $n < 0$ && ^{even} $n \% 2 == 0$)

}

if (^{-ve} $n < 0$ && ^{odd} $n \% 2 != 0$)

$x = \text{true}$

$y = \text{true}$

$z = \text{true}$

if ($!x$ || ($!y$ && $!z$))

why

else

what

$\boxed{!x} \rightarrow \text{false}$

$(!y \rightarrow \text{false} \&\& !z \rightarrow \text{false})$

false & false
false

!x || false

false || false → false

float a = 7.3f;
if (^{float} a == ^{double} 7.3)
 false

else {
 Know Program
}

7.3f
↓
float

7.3
↓
double