

(3)

500 days	$\div 365$	$\rightarrow$	1 year
500 % 365		$\rightarrow$	135 days
135 days	$\div 30$	$\rightarrow$	4 months
135 % 30		$\rightarrow$	15 days
15 days	$\div 7$	$\rightarrow$	2 weeks
15 % 7		$\rightarrow$	1 day

(4)

```

import java.util.Scanner;
class Operator
{
    psvm (String arg[])
    {
        Scanner ob = new Scanner (System.in);
        Sopln ("Enter a 7 digit no");
        int n = ob.nextInt();
    }
}
  
```

```

import java.util.Scanner;
class Day
{
    psvm (String arg[])
    {
        Scanner ob = new Scanner (System.in);
        Sopln ("Enter total days");
        int td = ob.nextInt();
        int tdy = td / 365;
        int tdy1 = td % 365;
        int tdm = tdy1 / 30;
        int tdm1 = tdy1 % 30;
        int tdw = tdm1 / 7;
        int tdw1 = tdm1 % 7;
        Sopln ("Total years = " + tdy + " month = " + tdm + " weeks = " + tdw + " days = " + tdw1);
    }
}
  
```

H/W

Q Given that $1^2 + 2^2 + 3^2 + 4^2 + \dots + N^2 = \frac{N(N+1)(2N+1)}{6}$

WAP to determine the value of $8^2 + 9^2 + 10^2 + \dots + 100^2$.

Solⁿ

Method $\rightarrow$ 1

class value

```
{
    psvm (String args[])
    {
        int s = 0;
        for (int i = 8; i <= 100; i++)
        {
            int a = i * i;
            s = s + a;
        }
        sopln(s);
    }
}
```

Method 2

class value

```
{
    psvm (String args[])
    {
        int s1 = 7 * (7 + 1) * (2 * 7 + 1) / 6;
        int s2 = 100 * (100 + 1) * (2 * 100 + 1) / 6;
        int s = s2 - s1;
        sopln(s);
    }
}
```

* Binary Operators $\Rightarrow$ which work on 2 operands.
Eg: +, -, /, %, etc.

* Ternary Operators $\Rightarrow$ which work on 3 operands.
Eg:- Conditional operator.
(condition)? ____ : ____;

✓
int a = 10;

int b = (a != 10) ? 20 : 30;

Soln (b); $\rightarrow$ 30

Convert above question into if-else.

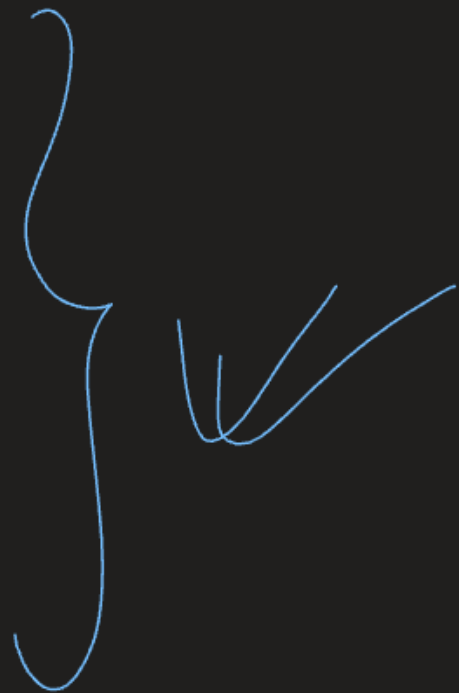
```
if (a = 10)  
    SoplN(20);  
else  
    SoplN(30);
```

```
int a = 10;  
if (a != 10)  
    SoplN(20);  
else  
    SoplN(30);  
✓✓
```

```
int a = 10;  
if (a != 10)  
    b = 20;  
else  
    b = 30;  
SoplN(b);
```

```
char ch = 'A';  
int n = (ch == 'a') ? 65 : 66;  
Sopln(n); → 66
```

```
char ch = 'A';  
if (ch == 'a')  
    int n = 65;  
else  
    int n = 66;  
Sopln(n);
```



*Mathematical Library

(i) Math.pow(a, b); → This function is used to find the value of index of a number expressed in the exponential form.

Return type → Double.

So `println(Math.pow(2, 3));` → 8.0

So `println(Math.pow(5.0, -2.0));` → 0.04

$$(5)^{-2} \Rightarrow \left(\frac{1}{5}\right)^2 = \frac{1}{25} = 0.04$$

(2) Math.sqrt() → To find the square root of a positive no.

RT → Double

Eg: - Math.sqrt(144); → 12.0

If -ve no. is passed in argument it shows NaN.

(3) Math.cbrt() $\rightarrow$ To find the cube root of any real no.

RT $\rightarrow$ Double

Eg:- Math.cbrt(-27); $\rightarrow$ -3.0

(4) Math.abs $\rightarrow$ It gives absolute value of the argument (magnitude)

RT $\rightarrow$ int / long / double

Eg:- Math.abs(20-21); $\rightarrow$ 1

(5) Math.log() → It is used to return the natural logarithmic
value of a given argument. ✓

$$\log_{10} 10 = 1$$

$$\log_e 10$$

RT → Double ✓

Eg : → `System.out.println(Math.log(2));` → 0.3

$$e = 2.73 \dots$$