21 Jan '21

2/24) MATHS (15 mins)

Q1) **No. of digits** in a number.

A1) Iterative Method ;

```
int digits (int n) {
    int count = 0
    while ( n != 0) {
            n = n/10
            count++
    }
    return count
}
```

Recursive Method ;

```
int digits (int n) {
    if (n == 0)
        return 0
    return 1 + digits (n/10)
```

Logarithm solution ;

return floor (log 10(n) + 1)

Q2) **Prime numbers**

Any prime no. can be represented as $6n+1$ or $6n-1$ expect 2 and 3.

Q3) Arithmetic Progression (AP)

$a, a+1d, a+2d, \ldots\ldots, a+(n-1)d$

Sum = $n/2\ [2a+(n-1)d]$

Q4) Geometric Progression (GP)

$ar^0, ar^1, \ldots\ldots, ar^{n-1}$

Sum = $a\left[\frac{r^n-1}{r-1}\right]$

Q5) Quadratic Equations

$ax^2 + bx + c = 0$

$D = b^2 - 4.ac$

$x = \frac{-b \pm \sqrt{D}}{2a}$

$D<0$	Imaginary roots
$D=0$	Equal roots
$D>0$	Distinct roots

* Mean & Median

eg; $S = \{7, 3, 8, 1, 5\}$

Mean = $1 + 3 + 5 + 7 + 8 = 34/5$

Median = $\{1, 3, 5, 7, 8\} = 5$

* LCM and HCF

LCM : Lowest Common Multiple : $\{12, 16\} = 48$

HCF : Highest Common Factor : $\{12, 16\} = 4$