1) An urn contains 6 yellow, 5 blue, 2 white marbles. If 3 marbles are picked at random. What is the probability that atleast one is blue

$^5C_1 \times {}^8C_2$: $\frac{5}{1} \times \frac{4}{\cancel{8} \times 7 / \cancel{2} \times 1}$

$^5C_2 \times {}^8C_1$ $\frac{5 \times 4^2}{2 \times 1} \times 8$

$^5C_3 \times {}^8C_0$ $\frac{5 \times 4 \times 3^1}{3 \times 2 \times 1} \times 1$

$\frac{5 \times 28 + 10 \times 8 + 10 \times 1}{13C_3}$

$\frac{140 + 80 + 10}{\frac{13 \times 12 \times 11}{3 \times 2 \times 1}}$

$\frac{230}{286}$

$\frac{2^5 \times 5}{140}$

140
80
10
230

$\frac{13 \times 2 \times 11}{26 \times 11}$
26
26
286

115
230
286
143

: $\frac{115}{143}$

2) The average of 5 consecutive integers starting with m as the first integer is n. What is average of 9 consecutive integer that start with (m+2)?

a) n+3
b) n+5
c) n+4
d) n+6.

avg of 1st 5 = n

$$\frac{m + m+1 + m+2 + m+3 + m+4}{5} = n$$

$$5m + 10 = 5n$$

$$5(m+2) = 5n$$

$$(m+2) = n$$

3)

4)

next num

$$\frac{(m+2) + \ldots\ldots (m+10)}{9} = \frac{9(m+6)}{9}$$

$$\frac{9m+54}{9} = m+6$$

$$m+2+4$$

c) $n+4$

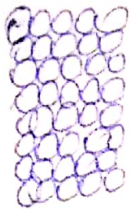
3) If the product xy is negative, which of the following must be true

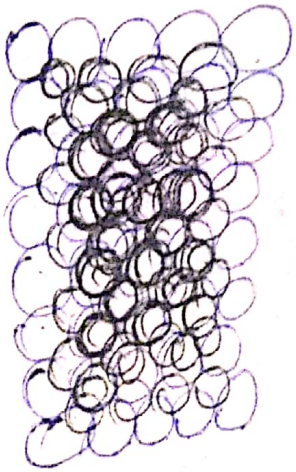
$x \times y = -ve$.

either x is $-ve$ or y is $-ve$

(d) $x/y < 0$

4) A grocer stacks oranges in a pyramid like stack whose rectangular base is 5 oranges by 8 oranges. Each orange s above the first level rests in a pocket formed by four oranges in the level below. The stack is completed by a single row of oranges. How many oranges are in the stack?





$8 \times 5 = 40$

$7 \times 4 = 28$

$6 \times 3 = 18$

$5 \times 2 = 10$

$4 \times 1 = 4$

100

5) Salaries of Usha & Esha are in the ratio 2:3. If the salary of each is increased by 4000, the new ratio becomes 40:57. What is the Esha's salary

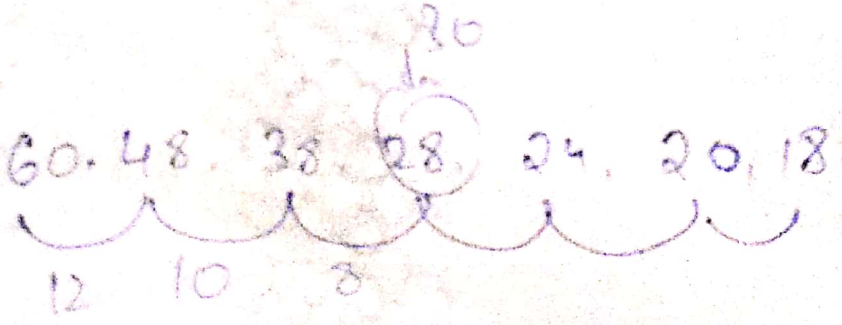
U : E = 2 : 3

U = 2x

E = 3x

$\frac{2x+4000}{3x+4000} = \frac{40}{50}$

6) Geethas mother



7) In an election b/w two candidates, one got 55% of the total valid votes. 20% of the votes were invalid. If the total number of votes was 7500, the number of valid votes the other candidate got, was.

a) 2700 b) 2900 c) 3100 d) 3000

Total 7500

Valid votes = $7500 \times \frac{80}{100}$

votes of other = $75\cancel{00} \times \frac{\cancel{80}^{4}}{\cancel{100}} \times \frac{\cancel{45}\ 9}{\cancel{100}\ 20}$

$34 \quad 8$

36×75

180

252

2700

(a) 2700

8) In a certain bathtub, both the cold water & hot water fixtures leak. The cold

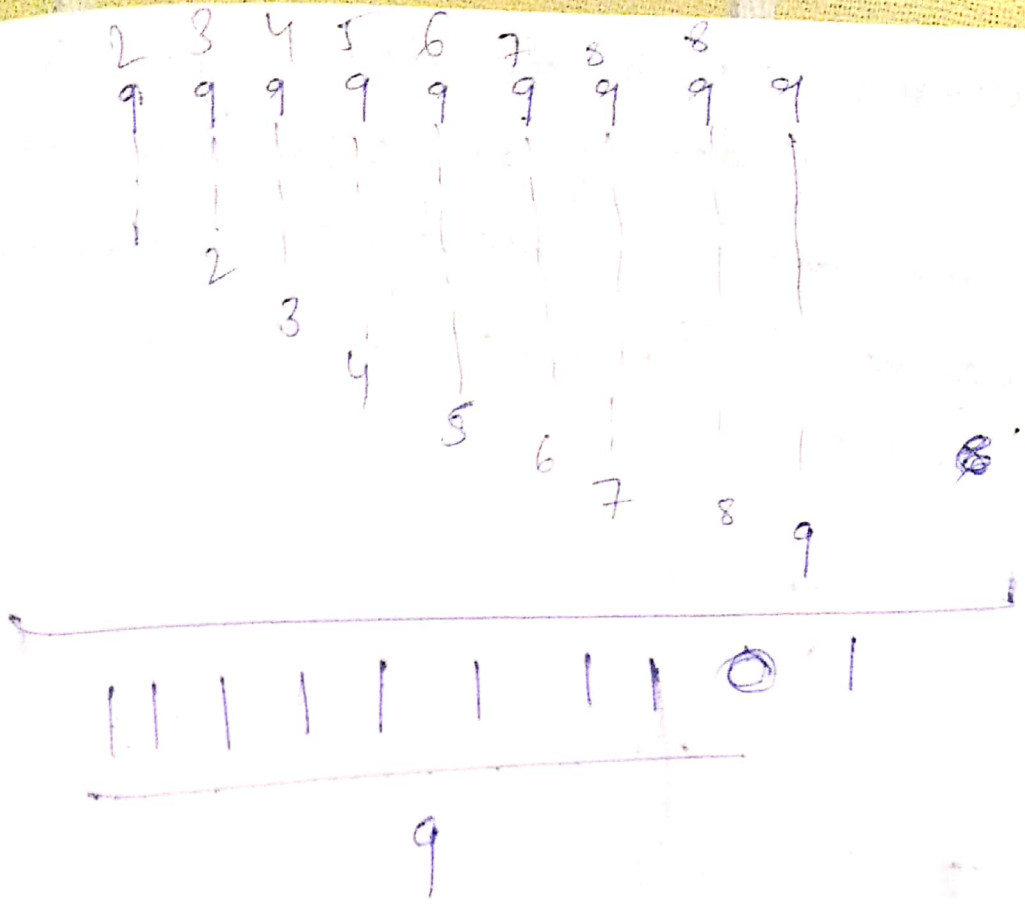
5, 9) In a class 120 students are male & 100 students are female. 25% of the males

6)

10) The arithmetic mean of nine numbers in the set (9, 99, 999, 9999 ... 999999999) is a 9 digit no M, all of whose digits are distinct. Which of the following digits is not contained in M.

1) 4 2) 6 3) 2 4) 0

$$\text{Avg} = \frac{9+99+999+9999+\ldots+999999999}{9}$$



123456789 0 is not there

1+1+1+1+1+1+1+1+1

123456789 0+8+7+6+5+4+3+2+1

0 is not there

11) A number when divided by a divisor leaves a remainder of 24. When twice the original number is divided by the same divisor, the remainder is 11. What is the value of the divisor

$$y \overline{)\, x}\ P$$

$$24$$

$$x = Py + 24$$

$$2x = \frac{2Py + 48}{y}$$

$$= \frac{0 + 48}{2y} = 11 \quad \text{Remainder}$$

37 will be only no giving remainder 11

12) A train travelling at 72 Kmph crosses platform in 30 sec and man standing on the platform in 18 seconds. What is the length of the platform in meters.

a) 600 m b) 360m c) 420m d)

The sum of 9th and 19th elements

15) Esha, Babu and Chitra work in a handicraft factory. Esha alone takes 10 hours to complete a single product but Babu and Chitra working together takes 4 hours, for the completion of the same product. If all of them worked together and completed 14 products, then how many hours have they worked?

Esha = 10h ⇒ 1 product

Babu + Chaith = 4h ⇒ 1 product

Esha $\xrightarrow{20h}$ (2) product

Babu + Chaith $\xrightarrow{20}$ (5) product

7 product for 20h → 7 product for 20h

14 product for 20h.

Coding

Integer . parseInt(arg[0])

```
class Evenodd
{
  P.S.V.M (String arg[])
  {
    int a = Integer. parseInt(arg[0])
        if (a%. 2 == 0)
          S.O.P ("Even");
        else
          S.O.P ("Odd");
  }
}
```

Evenodd.java

javac Evenodd.java

Java Evenodd

```
class primenum
{
  p.s.v.m (String arg[])
  {
    p.s.v.m (String arg[])
    {
      int x = Integer.parseInt(arg[0]);
        int i = 2;
        while (i <= x/2)
        {
          if (x % i == 0)
          {
            S.o.p ("Not PrimeNumber");
            return;
          }
          i++;
        }
        S.o.p ("Prime Number");
    }
}
```

Sum of n elements java Sum 8 10 20 15 35 45

```
class Sumple
{
P.S.V.M (String arg[])
{
    int Sum = 0;
    int x = Integer.parseInt(arg[0])
}
for(int i=0; i<arg.legth ; i++)
{
    Sum = Sum + Integer.ParseInt(arg[i]) ;

}
S.O.P(Sum);
}
```

GCD of two number by taking value from command line

```
class GCD
{
P.S.V.M (String arg[])
{
Int x = Integer.parseInt(arg[0]);
int y = Integer.parseInt(arg[1]);
int gcd=1; i=2;
while(i<=x && i<=y)
{
if(x%i ==0 && y%i==0)
    gcd=i;
} i++;
S.O.P(gcd);
}
}
```

LCM of 2 Numbers

5 | 15, 25
5 | 3, 5

```
class LCM
{
p.s.v.m (String arg[])
{
int x = Integer.parseInt(arg[0])
int y = Integer.parseInt(arg[1])
int lcm = (x>y) ? x : y;
while (true)
{
if(lcm%x==0 && lcm%y==0)
{
So.p(lcm);
}
lcm=lcm+big;
}
}
}
```

15 25
25
50
75

LCM of 2 number
avg of 2 numbers
* Sum of digits of a number
Binary to Decimal
Decimal to Binary
factorial of a number
* Square root of Prime Number
* Square root without builtin method.
Armstrong Number
Binary to Octal
Decimal - to Octal
Check leap Year
Area of a ○le
Area of a △le
Check the no is palindrome or not
check String is palindrome or not
reverse the digits of the number.