32) 0, 1, 4, 5, 8

$3 \times 4 \times 3 \times 2 = 72$

$4 \times 4 \times 3 \times 2 \times 1 = 96$

168

35) 0 2 5 7 8

Greater 4000

$3 \times 4 \times 3 \times 2 = 72$

$4 \times 4 \times 3 \times 2 \times 1 = 96$

168

37) 1, 2, 5, 6

38) 1 to 9

$9 \times 8 \times 7 \times 6 \times 5 =$

$210 \times 72 =$ 15120

45) Total NO: 8

3, 4, 5, 6, 7

5 4 3 2 1 = 120

5 4 3 2 = 120

5 4 3 = 60

5 4 = 20

5 = 5

325

Combination

$$^{n}C_{r} = \frac{n!}{(n-r)! \times r!}$$

selection

1) A, B, C

Total = 3

select = 1

Ways = 3 (A / B / C)

$\Rightarrow {}^{3}C_{1} = \frac{3!}{(3-1)! \times 1!} = \frac{3 \times 2 \times 1}{2 \times 1 \times 1} = \boxed{3}$

2) A, B, C

Total (n) = 3

select (required) (r) = 2

AB, BC, AC (3)

$\Rightarrow {}^{3}C_{2} = \frac{3!}{(3-2)! \times 2!} = \frac{3!}{1! \times 2!} = \frac{3 \times 2!}{2!} = \boxed{3}$

1) $n=10 \quad r=7 \longrightarrow {}^{10}C_7 = \frac{10!}{3! \times 7!} = \frac{10 \times 9 \times 8 \times \cancel{7!}}{3 \times 2 \times 1 \times \cancel{7!}}$

$= \frac{10 \times 9 \times 8}{3 \times 2 \times 1}$

${}^{10}C_7 = {}^{10}C_3$

2) $n=20 \quad r=18 \longrightarrow {}^{20}C_{18} = \frac{20!}{2! \times 18!} = \frac{20 \times 19 \times \cancel{18!}}{2 \times 1 \times \cancel{18!}}$

${}^{20}C_{18} = {}^{20}C_2 = \frac{20 \times 19}{2 \times 1}$

3) $n=12 \quad r=9 \longrightarrow {}^{12}C_9 = \frac{12!}{3! \times 9!} = \frac{12 \times 11 \times 10 \times \cancel{9!}}{3 \times 2 \times 1 \times \cancel{9!}}$

${}^{12}C_9 = {}^{12}C_3 = \frac{12 \times 11 \times 10}{3 \times 2 \times 1}$

4) $n=25 \quad r=23 \longrightarrow {}^{25}C_{23} = \frac{25!}{2! \times 23!} = \frac{25 \times 24 \times \cancel{23!}}{2 \times 1 \times \cancel{23!}}$

${}^{25}C_{23} = {}^{25}C_2 = \frac{25 \times 24}{2 \times 1}$

1) $12C_4 = \frac{12 \times 11 \times 10 \times 9}{4 \times 3 \times 2 \times 1}$

2) $13C_2 = \frac{13 \times 12}{2 \times 1}$

3) $17C_5 = \frac{17 \times 16 \times 15 \times 14 \times 13}{5 \times 4 \times 3 \times 2 \times 1}$

4) $25C_{24} = 25C_1 = 25$

5) $28C_{26} = 28C_2 = \frac{28 \times 27}{2 \times 1}$

Combination काढणे :-

→ n ला r वेळेस मागे घेऊन r! ने Divide करावे.

1) $14C_2 = \frac{14 \times 13}{2 \times 1} = \boxed{91}$

2) $20C_3 = \frac{20 \times 19 \times 18^{3}}{6} = \boxed{1140}$

3) $18C_2 = \frac{{}^{9}18 \times 17}{2 \times 1} = \boxed{153}$

4) $25C_4 = \frac{25 \times 24 \times 23 \times 22}{24} = {}^{11}550 \times 23 = \boxed{12650}$

5) $18C_{16} = 18C_2 = \frac{{}^{9}18 \times 17}{{}_{1}2 \times 1} = \boxed{153}$

6) $30C_{27} = 30C_3 = \frac{30 \times 29 \times {}^{14}28}{3 \times 2 \times 1} = \boxed{4060}$

7) $40C_{38} = 40C_2 = \frac{{}^{20}40 \times 39}{2 \times 1}$

$= \boxed{780}$

7) $40C_{38} =$