SECTION A

^^The sign of the quadratic function y =x^2 -10x +25 is

@@ negative
@@ non -negative
@@ positive ~
@@ neutral
@@ non -positive

^^ If α and β are roots of the equation 4x^2 -6x +3 =0. Then the value of $\frac{1}{\alpha^2} + \frac{1}{\beta^2}$ is

@@ $\frac{-4}{3}$
@@ $\frac{-3}{4}$
@@ $\frac{4}{3}$ ~
@@ $\frac{3}{4}$
@@ -1

^^If the roots of the equation px^2 +q = 0 differs by 1 then the relationship between p and q will be?

@@ p -4q =0

@@ p +4q =0

@@ p +2q =0

@@ p -2q =0

@@ 3p =4q~

^^If α and β are roots of the equation 3x^2 -6x +4 =0. Then the equation whose roots are $\frac{1}{\alpha}, \frac{1}{\beta}$ is

@@ 4x^2 -6x -3 =0

@@ 4x^2 -6x +3 =0~

@@4x^2 +6x +3 =0

@@ 4x^2 -6x +5 =0

@@ 4x^2 -6x -5 =0

^^quadratic equation ax^2+bx+c=0 has complex roots if

@@ b^2 -4ac >0

@@ b^2 -4c ≤0

@@ b^2 -4c <0

@@ b^2 +4ac <0

@@ b^2 -4ac <0~

^^What is the nature of the roots of the equation $4x^2$ +4x +1 =0

@@ real and distinct

@@ complex

@@ equal

@@ real and equal ~

@@ None of the above

^^The value of λ for which the equation λx^2 -4x +4 =0 has equal roots is

@@2

@@-2

@@-1

@@1~

@@0

^^If α,β are the roots of the equation x^2+6x-3=0. Find an equation whose roots are α^2,β^2

@@ x^2+42x+5=0

@@ x^2-30x+9=0

@@ x^2+-42x+9=0~

@@ x^2+30x-9=0

@@ None of the above.

^^An equation whose roots are $\frac{\alpha}{2}$ and β is

@@ $2x^2$ -(α +2β)x +αβ =0 ~

@@x^2 -(α +2β)x +αβ =0

@@$2x^2$ -(α +β)x +2αβ =0

@@ $2x^2$ -(α +β)x +αβ =0

@@ x^2 -(α +β)x +αβ =0

^^The following pairs of equations have the same nature of roots except

@@ $2x^2$ -x -1 =0 & x^2 +2x +1 =0
@@ x^2 +x +1 =0 & x^2 -2x -1 =0

@@ $2x^2 -2x +1 =0$ & $x^2 -3x +5 =0$ ~
@@ $2x^2 -4x -1 =0$ & $4x -x^2 -1 =0$
@@ $x^2 -x -1 =0$ & $x^2 -2x -1 =0$

^^If α, β are roots of the equations $5x^2 -x +2 =0$, find an equation whose roots are the reciprocals of those of $5x^2 -x +2 =0$.

@@ $2x^2 +10x +5 =0$

@@ $2x^2 -10x +5 =0$

@@ $25x^2 -15x +2 =0$

@@ $2x^2 +x -2 =0$

@@ None ~

^^If α and β are the roots of the equation, $2x^2 -3x -6 =0$, find the value of $(\alpha -\beta)^2$.

@@ $\frac{57}{4}$ ~
@@ $\frac{-57}{4}$
@@ $\frac{4}{57}$
@@ $\frac{-4}{57}$
@@ $\frac{9}{4}$

^^If α and β are the roots of the equation, $2x^2 -3x -6 =0$, find the equation whose roots are 2α and 2β .

@@ $2x^2 +3x -6 =0$

@@ $6x^2 -4x +8 =0$

@@ $x^2 -3x -12 =0$ ~

@@$4x^2 -5x -8 =0$

@@ none

^^If α and β are the roots of the equation,$x^2 -3x -6 =0$, find the value of $\alpha^2 +\beta^2$.

@@ 19
@@20
@@ 21~
@@ 22
@@ 23

^^If α and β are the roots of the equation, $x^2 +3x +2 =0$, find the value of $\alpha +\beta$.

@@ 4

@@ -3 ~
@@ 2

@@1

@@ none

^^Find the equation whose roots are -1 and 3.

@@ x^2 -2x -3 =0 ~

@@ x^2 -4x +8 =0

@@ x^2 +2x +3 =0

@@ $4x^2$ -5x -8 =0

@@ none

^^Find the equation whose roots are -2 and -1.

@@ x^2 -2x +2 =0

@@ x^2 +3x +2 =0 ~

@@ x^2 +2x -5 =0

@@ $4x^2$ -5x -8 =0

@@ none

^^Find the equation whose roots are 2 and 5.

@@ $2x^2$ -2x -5 =0

@@ x^2 -x +10 =0

@@ x^2 -7x +10 =0~

@@ $4x^2$ -5x -8 =0

@@ none

^^Find the value of k for which the equation (k +1)x^2 +2 =0 has equal roots.

@@ k < -1
@@ k < -1
@@ k >2
@@ k = -1 ~
@@ none

^^Find the value of k if 1 is one of the roots of the equation x^5 -3x^4 -5x^3 +kx^2 +4x -12 =0.

@@ k =12

@@ k = -12

@@ k =0

@@ k =15 ~

@@ none of these.

^^If the remainder on dividing x^5 +4x^2 +x +a by x +1 is 4, then the value of a is?

@@ 7

@@ 2~
@@ 6
@@ 0
e. 3

^^Find the value of b for which $x^3 - x^2 + bx + 3$ have a reminder of 4 when divided by x -1.

@@ 1~

@@ -2

@@ 3

@@ 2

@@ 5

^^Which of the following equation has complex roots

@@ $x^2 + 2x - 1 = 0$

@@ $-x^2 - x + 1 = 0$

@@ $2x^2 + x - 1 = 0$

@@ $2x^2 - x + 1 = 0$ ~

^^The equation $x^2 + ax - b = 0$ will have real and distinct roots if

@@ $b^2 - 4a > 0$

@@ $a^2 + 4b > 0$~

@@ $b^2 + 4a < 0$

@@ $a^2 - 4b > 0$

^^The value of P for which the equation $x^2 - Px + 1 = 0$ has equal roots

@@ ±4

@@ ±3

@@ ±2 ~

@@ ±1

@@ 0

^^If α and β are the roots of the equation, $x^2 - 4x + 2 = 0$. Find the equation whose roots are, 2α and 2β is

@@ $12x^2 - 3x + 1 = 0$
@@ $12x^2 - 3x - 1 = 0$
@@ $8x^2 + 3x - 1 = 0$
@@ $x^2 + 8x + 8 = 0$ ~

@@ none of these.

^^If $(x + 2)$ is a factor of $x^3 - ax^2 + 7x + 10$ then the value of a is

@@ 0

@@ -3 ~

@@ 2

@@ 4

^^If (x -2) is a factor of x^3 +ax^2 +11x -6 then the value of a is

@@ -3

@@ 1

@@ -6~

@@ 3

@@ 6

^^If (x -1) is a factor of ax^3 -x^2 -7x +6 then the value of a is

@@ 0

@@ 1

@@ 2~

@@ 3

@@ 4

^^If (x +2) is a factor of x^3 -$2x^2$ +ax +6 then the value of a is

@@ 10

@@ 11

@@ 12

@@ 13~

@@ 14

^^If (x +1) is a factor of $2x^3$ +ax^2 -4x -7 then the value of a is

@@ 1

@@ 2

@@ 3

@@ 4

@@ 5~

^^If (x -1) is a factor of x^3 +ax^2 -x +2 then the value of a is

@@ 1

@@ 22

@@ -2~

@@ 3

@@4

@@5

^^If (x +2) is a factor of x^3 +$4x^2$ +ax -6 then the value of a is

@@ 0

@@ 1~

@@ 2

@@ 3

@@ 4

^^If (x -3) is a factor of $x^3 - 2x^2 + ax + 6$ then the value of a is

@@ 0

@@ -2

@@ 2

@@ -5~

@@ 5

^^If (x +2) is a factor of $x^3 + ax^2 + 14x + 6$ then the value of a is

@@ 5

@@ 6

@@ 7~

@@ 8

@@ 9

^^If (x -1) is a factor of $x^3 - 6x^2 + ax - 6$ then the value of a is

@@ 10

@@ 11~

@@ 12

@@ 13

@@ 14

^^ Given that $x^2 - x + k = 0$, then the value of k for which the equation has equal roots is?

@@ $\frac{9}{8}$

@@ $\frac{8}{9}$

@@ $\frac{-9}{8}$

@@ $\frac{1}{4}$ ~

@@ $\frac{5}{8}$

^^Find the value p for which the roots of the equation $x^2 + (p-1)x - p = 0$ are equal:

@@. -2 twice

@@ . -1 twice ~

@@ 0 twice

@@ 1 twice

^^If (x +1) is a factor of $2x^3 + ax^2 - 4x - 7$ then the value of ***a*** is

@@ 2

@@ 23

@@ 4

@@ 5~

@@ None

^^quadratic equation $ax^2+bx+c=0$ has complex roots if

@@ $b^2 - 4ac > 0$

@@ $b^2 - 4c \leq 0$

@@ $b^2 - 4c < 0$

@@ $b^2 + 4ac < 0$

@@ $b^2 - 4ac < 0$~

^^What is the nature of the roots of the equation $4x^2 + 4x + 1 = 0$

@@ real and distinct

@@ complex

@@ equal

@@ real and equal ~

@@ None of the above

^^If x^2+px+q is divisible by x-4 and leaves a remainder -6 when divided by x-3. Then the values of p and q are

@@ -1,12

@@ -1,-12~

@@ 1,12

@@ -12,1

@@ 12,1

^^Find the values of p and q such that x+1 and x-2 shall be factors of x^3+px^2+2x+q are

@@-5,-8

@@ 5,-8

@@ -5,8 ~

@@ -2,5

@@ -2,-5

^^The factorization of $2x^2 + xy - 6y^2$ is

@@ (2x -6y)(x +y)
@@ (2x -3y)(x +2y) ~
@@ (2x -3y)(x -2y)
@@ (x -3)(x +2y)
@@ (2x -3y)(x +y)

^^Given that $x^2 - Kx + 1 = 0$, then the value of k for which the equation has equal roots is?

@@ 1

@@ 2~

@@ 3

@@ 4

@@ None

^^The value of λ for which the equation $\lambda x^2 - 4x + 4 = 0$ has equal roots is

@@2

@@-2

@@-1

@@1~

@@0

^^If α,β are the roots of the equation $x^2+6x-3=0$ Find an equation whose roots are α^2,β^2

@@ $x^2+42x+5=0$

@@ $x^2-30x+9=0$

@@ $x^2+-42x+9=0$~

@@ $x^2+30x-9=0$

@@ None of the above.

SECTION B

^^If $y = x^2 - 5x + 6$ is negative, then

@@ x =2or x =3

@@ 2 <x <3 ~

@@ x <2or x >3

@@ x <2 only

@@ x <3 only

^^If $x + \frac{1}{x} = a$, then $x^2 + \frac{1}{x^2}$ equals

@@ a^2 +1

@@ a^2 -2 ~

@@ a^2

@@ a^2 +2

^^If $x + \frac{1}{x} = a$, then $x^2 + \frac{1}{x^2} + 2$ equals

@@ a^2 +1

@@ a^2 -2

@@ a^2 ~

@@ a^2 +2

^^If $x + \frac{1}{x} = a$, then $x^2 + \frac{1}{x^2} + 2$ equals

@@ a^2 +1

@@ a^2 -2

@@ a^2 ~

@@ a^2 +2

@@ None

^^If $x + \frac{1}{x} = a$, then $x^2 + \frac{1}{x^2}$ equals

@@ a^2 +1

@@ a^2 -2 ~

@@ a^2

@@ a^2 +2

@@ None

^^The real values of x for which the expression (3x-4)(5x-2) is negative are

@@ x<4/ 3

@@4/3 <x

@@ 2/5 < x

@@x< -4/3

@@ 2/5 <x< 4/3~

^^If $y = x^2 - 7x + 12$ is negative, then

@@ x <3 only

@@ 3 <x <4 ~

@@ x <2or x >3

@@ x <2 or x <6

@@ x <3 or x >4

^^The range of values of x for which the function $y = (x - 2)(x - 3)$ is negative is

@@ $2 \leq x \leq 3$

@@ x ≤2
@@ x <2 or x >3
@@ 2 <x <3 ~
@@. None

^^Which of the following is not a symmetric expression of α and β

@@ $\frac{\alpha}{\beta} + \frac{\beta}{\alpha}$

@@ $(\alpha - \beta)^2$ ~

@@ $\alpha^3 + \alpha\beta - \beta^3$

@@ $\left(\alpha^2 + \frac{1}{\beta^2}\right)\left(\beta^2 + \frac{1}{\alpha^2}\right)$

@@ $(\alpha + \beta)^2$

SECTION C

^^The maximum or minimum points of $y= x^2+6x+5$ is

@@ (-1,3)

@@ (- 3, 14)

@@ (3,-1)

@@)(3,4)

@@ (-3-,4)~

^^The maximum or minimum value of the equation $12x^2 + 24x + 13$ is at?

@@ - 1~

@@ - 9

@@ 1

@@ 8

^^ The maximum point of $y = -x^2 + 3x - a$ is

@@ $\frac{4a - 9}{-4}, \frac{3}{2}$

@@ $\frac{3}{2}$

@@ $\frac{4a - 9}{4}$

@@ $\frac{3}{2}, \frac{9 - 4a}{4}$ ~

@@ None

^^The minimum value of $y = x^2 + 3x - 6$ is at

@@ $\frac{-33}{4}$

@@ $-\frac{3}{2}$ ~

@@ 5

@@ 2

@@ 12

^^The maximum or minimum point of the equation $y = 2x^2 + 4x - 1$ is

@@ (2, -3)

@@ (-1, -4)

@@ (1,3)

@@ (1,9)

@@ (-1, -3)~

^^The maximum or minimum value of the equation $y = 2x^2 + 3x - 1$ is at

@@ $\frac{4}{3}$

@@ $\frac{-3}{4}$ ~

@@ $\frac{-17}{4}$

@@ $\frac{17}{4}$

@@ $\frac{3}{4}$

^^The maximum or minimum value of the equation $y = x^2 - 6x - 4$ is at?

@@ none

@@ -2

@@ 13

@@ 3 ~

@@ -13

^^The maximum or minimum value of the equation $y = 4x^2 + 4x + 1$ is

@@ 0 ~

@@ $\frac{2}{3}$

@@ $-\frac{1}{2}$

@@ $-\frac{2}{3}$

@@ none

^^The maximum or minimum value of the equation $y = x^2 - 2x + 2$ is

@@ 1

@@ 2

@@ 3

@@ -4 ~

@@ none of these

^^The maximum or minimum value of the equation $y = 6x^2 - 8x + 1$ is at

@@ $\frac{5}{6}$

@@ $\frac{-2}{5}$

@@ -`1

@@ $\frac{2}{3}$ ~

@@ $-\frac{5}{6}$

^^The maximum or minimum value of the equation $y = x^2 + 2x + 1$ is

@@ 0 ~

@@ 1

@@ 2

@@ 3

@@ 4

^^The maximum or minimum point of the equation $y = 2x^2 + 4x - 8$ is

@@ (10,1)
@@ (-1, -10) ~
@@ (1,10)
@@ (1, -10)
@@ (-1,10)

SECTION D

^^Resolve $\frac{2x}{(x+1)(x-1)}$ into partial fractions

@@ $\frac{1}{x-1} - \frac{1}{x-1}$

(b) $\frac{1}{x+1} - \frac{1}{1-x}$

@@ $\frac{1}{x+1} + \frac{1}{1-x}$

@@ $\frac{1}{x+1} + \frac{1}{x-1}$ ~

@@ None

^^If $\frac{3}{(x+1)(x-2)} = \frac{A}{x+1} + \frac{B}{x-2}$, the value of 3B is

@@ 3~

@@ 1

@@ -1

@@ -3

@@ None

^^The partial fractions of $\frac{4x-5}{(x-2)(x+1)}$ are

@@ $\frac{1}{x-2}+\frac{3}{x+1}$ ~

@@ $1+\frac{1}{1+x}-\frac{3}{x-2}$

@@ $1-\frac{1}{x-1}+\frac{3}{x}$

@@ $1+\frac{1}{2(x-2)}-\frac{1}{2(x+1)}$

@@ $\frac{1}{2(x-2)}+\frac{1}{2(x+1)}$

^^The partial fractions of $\frac{12}{(x-3)(x+3)}$ are

@@ $\frac{2}{x-3}+\frac{1}{x-3}$

@@ $\frac{2}{x-3}-\frac{2}{x+3}$ ~

@@ $\frac{1}{x-3}+\frac{3}{x}$

@@ $\frac{1}{2(x-3)}-\frac{1}{2(x+3)}$

@@ $\frac{1}{2(x-3)}+\frac{1}{2(x+3)}$

^^The partial fractions of $\frac{4(x-4)}{(x+1)(x-3)}$ are

@@ $\frac{5}{x+3}+\frac{1}{x+1}$

@@ $\frac{1}{1-x}-\frac{5}{x-3}$

@@ $\frac{5}{x+1}-\frac{1}{x-3}$ ~

@@ $\frac{5}{2(x-3)}-\frac{1}{2(x+1)}$

@@ $\frac{1}{2(x-1)}+\frac{5}{2(x+1)}$

^^The partial fractions of $\frac{1}{(x^2+1)(x-1)}$, are in the form

@@ $\frac{Ax+B}{(x^2+1)} + \frac{C}{(x-1)}$ ~

@@ $\frac{A}{(x^2+1)} + \frac{C}{(x-1)}$

@@ $\frac{A}{(x+1)} + \frac{B}{(x+1)} + \frac{C}{(x-1)}$

@@ $\frac{A}{(x+1)} + \frac{B}{(x^2+1)} - \frac{C}{(x+1)}$

@@ None

^^The partial fractions of $\frac{x-10}{(x+2)(x-1)}$ are

@@ $\frac{1}{x-1} + \frac{1}{x-2}$

@@ $\frac{4}{2+x} - \frac{1}{x-1}$

@@ $\frac{3}{x-1} + \frac{1}{x}$

@@ $\frac{4}{(x+2)} - \frac{3}{(x-1)}$ ~

@@ $\frac{3}{2(x-1)} + \frac{1}{2(x+2)}$

^^The partial fractions of $\frac{2x+3}{(x-2)^2}$ are

@@ $\frac{2}{(x-2)} + \frac{7}{(x-2)}$

@@ $\frac{1}{(x+2)} - \frac{2}{(x-2)^2}$

@@ $\frac{2}{(x-2)} + \frac{7}{(x-2)^2}$ ~

@@ $\frac{7}{2(x-1)} - \frac{1}{2(x-2)^2}$

@@ $\frac{2}{2(x-2)} + \frac{1}{2(x-2)^2}$

^^The partial fractions of $\frac{4x-3}{(x+1)^2}$ are

@@ $\frac{2}{(x+1)} + \frac{7}{(x+1)}$

@@ $\frac{4}{(x+1)} - \frac{7}{(x+1)^2}$ ~

@@ $\frac{2}{(x-1)} + \frac{7}{(x+1)^2}$

@@ $\frac{7}{2(x+1)} - \frac{1}{2(x+1)^2}$

@@ $\frac{2}{2(x+1)} + \frac{1}{2(x+1)^2}$

^^The partial fractions of $\frac{3x-1}{(x-1)(x-2)}$ are

@@ $\frac{-2}{x-1} + \frac{5}{x-2}$ ~

@@ $\frac{1}{1-x} - \frac{5}{x-2}$

@@ $\frac{5}{x+1} - \frac{1}{x-2}$

@@ $\frac{5}{2(x-2)} - \frac{1}{2(x-1)}$

@@ $\frac{1}{2(x-1)} + \frac{5}{2(x-2)}$

^^The partial fractions of $\frac{11-3x}{(x-1)(x+3)}$ are

@@ $\frac{5}{x-3} + \frac{1}{x+1}$

@@ $\frac{1}{1+x} - \frac{5}{x-3}$

@@ $\frac{5}{x+1} - \frac{1}{x+3}$

@@ $\frac{2}{(x-1)} - \frac{5}{(x+3)}$ ~

@@ $\frac{1}{2(x-1)} + \frac{5}{2(x+3)}$

SECTION E

^^A committee of 5 is to be selected from 5 male and 7 female students. In how many ways such committee can be selected if it will contain 3 male and 2 female?

@@31 ~

@@210

@@ 45

@@ 350

@@ 530

^^ In how many ways can 3 prizes be awarded to a class of 10 students if everyone can win all the prizes?

@@10^2ways

@@10^3ways~

@@10X9X8 ways

@@10X3ways

@@10ways

^^If n_{C_1} =n_{P_0} , the value of n is?

@@ 1~

@@ 2

@@ 21

@@ 4

@@ 26

^^ Find the number of different selections of two out of the letters of the word PEN.

@@ 1

@@ 2

@@ 3~

@@ 4

@@ 5

^^ How many different arrangements are there in the letters ABCDEF the strings ABC is fixed?

@@ 6

@@ 12

@@ 24~

@@ 16

@@ 18

^^In how many ways can 3 men and 2 women be arranged out of a group of 5 men and 7 women.

@@ 100

@@ 1080

@@ 2520~

@@ 8010

@@ 840

^^ Find the number of permutation of the letters of the word ADAMAWA.

@@ 220

@@ 210~

@@ 70

@@ 140

@@ none

^^In how many ways can n objects arranged in a circular round table?

@@ n!

@@ (n +1)!

@@ (n -1)!~

@@ 2n!

@@ (2n -1)!

^^How many different arrangements can be made of the letters in the word BALARABE?

@@ $\frac{8!}{2!2!}$

@@ $\frac{8!}{2!}$

@@ $\frac{8!}{3!}$

@@ $\frac{8!}{2!3!}$ ~

@@ $\frac{8!}{3!3!}$

^^ The value of $\frac{8!}{2!(8-2)!}$ Is?

@@ 32

@@28~

@@ 36

@@23

@@ 66

^^Find the number of different selections of six out of the letters of the word UNIQUEE.

@@ 7

@@ 14

@@ 5

@@ 3

@@ None

^^Which of the following identity is true

@@ n_{Cr} =$n_{C_{r-1}}$

@@ n_{C2} =$n_{C_{r-1}}$

@@ n_{Cr-1} =$n_{C_{n-1}}$

@@ .n_{Cn-r} =n_{Cr} ~

@@ none of these

^^How many different arrangements are there for the letters PQRSTU if the string PQR is taken as a single letter?

@@ 6

@@ 12

@@ 24~

@@ 16

^^In how many ways can 3 men be selected out of 17?

@@ 120

@@ 620

@@ 680

@@ 260

@@ None of these ~

^^If n_{C4} =n_{P3} , the value of n is?

@@ 27~

@@ 22

@@ 21

@@ 24

@@ 26

^^Find the number of different selection of two out of the letters of the word PROBABILITY.

@@ 40

@@ 39

@@ 55~

@@ 36

@@ 16

^^The value of 6_{P4} is

@@ 240

@@ 720

@@ 120

@@ 360~

@@ 170

^^The value of 6_{C4} is

@@ 24

@@ 20

@@ 12

@@ 30

@@ 15~

^^The value of 6_{P2} is

@@ 24

@@ 20

@@ 12

@@ 30~

@@ 15

^^The value of 6_{C2} is

@@ 24

@@ 20

@@ 12

@@ 30

@@ 15~

^^The value of $\frac{9!}{2!(9-2)!}$ is

@@ 63

@@ 9

@@ 23

@@ 36~

@@ 66

^^The value of $\frac{8!}{2!(8-2)!}$ Is

@@ 32

@@ 28~

@@ 23

@@ 36

@@ 66

^^How many different arrangements are there for the letters PQRST if the string PQ is taken as a single letter?

@@ 6

@@ 12

@@ 24~

@@ 16

^^Find the number of different arrangements of two out of the letters of the word WASHING.

@@ 40

@@ 39

@@ 55

@@ 36

@@ 42~

^^In how many ways can 4 dogs and 3 cats be selected out of a group of 5 dogs and 6 cats.

@@ 100~

@@ 30240

@@ 3024

@@ 5040

@@ 504

^^How many different arrangements can be made of the letters in the word PROBABILITY

@@ $\frac{11!}{2!2!2!}$

@@ $\frac{11!}{2!2!}$

@@ $\frac{9!}{2!2!}$

@@ $\frac{11!}{3!2!}$ ~

@@ $\frac{10!}{2!2!}$

^^How many different arrangements can be made of the letters in the word SUCCESSFULLY?

@@ $\frac{12!}{2!2!2!3!}$ ~

@@ $\frac{12!}{2!2!2!}$

@@ $\frac{12!}{3!3!3!}$

@@ $\frac{12!}{2!2!3!3!}$

@@ None

^^The value of ${}^{7}C_{3}$ is?

@@ 32

@@ 28

@@ 35~

@@ 36

^^If $4 \cdot {}^{n}C_{4} = {}^{n}C_{3}$, the value of n is?

@@ 7~

@@ 16

@@ 4

@@ 1

@@ 8

^^Solve the equation ${}^{n}P_{3} = 24/5\ {}^{n}C_{4}$

@@7

@@8~

@@6

@@5

@@4

^^The value of $\frac{9!}{2!(9-2)!}$ is

@@ 63

@@ 9

@@ 23

@@ 36~

@@ 66

^^The value of $\frac{8!}{2!(8-2)!}$ Is

@@ 32

@@ 28~

@@ 23

@@ 36

@@ 66

^^How many different arrangements are there for the letters PQRST if the string PQ is taken as a single letter?

@@ 6

@@ 12

@@ 24~

@@ 16

^^Find the number of different arrangements of two out of the letters of the word WASHING.

@@ 40

@@ 39

@@ 55

@@ 36

@@ 42~

^^In how many ways can 3 men and 2 women be arranged out of a group of 5 men and 7 women.

@@ 100

@@ 1080

@@ 2520~

@@ 8010

@@ 840

^^In how many ways can n objects arranged in a circular round table?

@@ n!

@@ (n +1)!

@@ (n -1)!~

@@ 2n!

@@ (2n -1)!

^^How many different arrangements can be made of the letters in the word BALARABE?

@@ $\frac{8!}{2!2!}$

@@ $\frac{8!}{2!}$

@@ $\frac{8!}{3!}$

@@ $\frac{8!}{2!3!}$ ~

@@ $\frac{8!}{3!3!}$

SECTION F

^^The expression 4^{2n} -1 , for positive n is always divisible by

@@ 7

@@ 6

@@ 3 and 4

@@ 3 and 5~

@@ 8

^^If n is positive even integer, what is the remainder when x^n -1 is divided by x +1?

@@0~

@@ -2

@@ 1

@@ -1

@@ 2

^^The expression 5^n -1 is always divisible by

@@ 2~

@@ 3

@@ 5

@@ 7

@@ 9

^^The expression 8^n -1 is always divisible by

@@ 2

@@ 3

@@ 5

@@ 7~

@@ 9

^^The expression 4^n -1 is always divisible by

@@ 2

@@ 3~

@@ 5

@@ 7

@@ 9

^^The expression 4^{2n} -1 is always divisible by

@@ 2 and 3

@@ 3 and 5~

@@ 5 and 2

@@ 7 and 3

@@ 9 and 2

^^The process of which P_n is a statement whose domain is the set of positive integer, and that P_1 is true, and all $k \in Z^+$, $P_k$is also true, implies that P_{k+1}. Then the statement is P_n true for all positive values of n is

@@ Negation of mathematical induction

@@ principle of mathematical induction ~

@@ Binomial theory

@@ property of divisibility

@@ None of these.

SECTION G

^^There are 13 terms in the expansion of $(a + b)^{12}$. True or False

@@ True~

@@ False

^^The seventh term of $(a + b)^{12}$ is a multiple of a^6b^6. True or False

@@ True~

@@ False

^^In the expansion of $(x - 5)^8$ the sign of the terms alternate. True or False

@@ True~

@@ False

^^The eighth line of Pascal's triangle is

1 8 28 56 70 56 28 8 1. True or False

@@ True~

@@ False

^^The middle term in the expansion of $(2a - b)^8$ is

@@ $1120a^5b^3$

@@ $1120b^5$

@@ $1120a^5$

@@ $1120a^4b^4$ ~

@@ $1120a^3b^5$

^^The total number of terms in the binomial expansion of $(x + y)^p$ is

@@ p

@@ p^2

@@ $p^2 + 1$

@@ p +1~

@@ p -1

^^The third term in the expansion of $(2a + \frac{1}{2})^4$ is

@@ 6

@@ $6a^2$~

@@ $-6a^2$

@@ -6a

@@ 6a

^^The coefficient of x^3 in the expansion of$(x +y)^9$ is

@@ $24y^8$

@@ $4y^3$

@@ $24y^6$

@@ $84y^6$~

E.$24y^3$

^^The fourth term in the expansion of $(1 +3x)^{\frac{-1}{2}}$ is

@@ $\frac{-5x^4}{16}$

@@ $\frac{5x^3}{16}$

@@ x^2

@@ .$\frac{-5x^3}{16}$

@@ none of these ~

^^The constant term in the expression of $(x -\frac{1}{x})^8$ is

@@ 70~

@@ 120

@@ 102

@@ 80

@@ 88

^^The middle term in the expansion of $(2x^2 -\frac{1}{x})^{10}$ is

@@ $8064x^5$

@@ $-8064x^5$

@@ $8604x^5$

@@. $-8604x^5$

@@ none of these~

^^The fifth term in the expansion of $(3a +b)^7$ is

@@ $945a^7$

@@ $945a^3b^4$ ~

@@ $-945a^4b^3$

@@ $-945ab^6$

@@ none of these

^^The sixth term in the expansion of $(x + 2y)^8$ is

@@ $1792x^3y^5$ ~

@@ $-1792x^4y^4$

@@ $1792x^5y^6$

@@ $1792xy^7$

@@ $1927xy^7$

^^The third term in the expansion of $(a - 3b)^5$ is

@@ 90ab

@@ $-90a^5b^3$

@@ $90a^3b^2$ ~

@@ $-90ab^5$

@@ 90a

^^The constant term in the expansion of $(x - \frac{1}{x})^8$ is ?

@@. -70

@@ 1120

@@ 35

@@ 70~

^^The total number of terms in the binomial expansion of $(x + y)^{2q-1}$ is

@@ 2

@@ 2q -1

@@ $q^2 + 1$

@@ 2q ~

@@ q -1

^^The total number of terms in the binomial expansion of $(x + y)^n$ is

@@ n +2

@@ n

@@ $n^2 + 1$

@@ n +1 ~

@@ sn -1

^^Find the 5^{th} term in the expansion of $(x + y)^7$.

@@ $7x^5y^2$

@@ $35x^2y^5$

@@ $70x^7y^2$

@@. $35x^3y^4$ ~

@@ .none

^^The middle term in the expansion of $(2x + y)^8$ is

@@ $70x^5$

@@ $70x^6y^2$

@@ $1120y^4x^5$

@@ $1120x^4y^4$ ~

@@ $1120x^3y^5$

^^The total number of terms in the binomial expansion of $(x + y)^{p-2}$ is

@@ p

@@ p^2

@@ $p^2 + 1$

@@ p +1

@@ p -1~