**BITSAT Maths 2010 Sample Paper Test**

The equation of the normal to the circle x2 + y2 = a2 at point (x’ y’) will be :

|  |
| --- |
|  |
|  | x’ y – xy’ = 0 |
|  | xx – yy’ = 0 |
|  | xy’ + xy’ = 0 |
|  | xx’ + yy’ = 0 |

Equation of the bisector of the acute angle between lines 3x + 4y + 5 = 0 and 12x – 5y – 7 = 0 is :

|  |
| --- |
|  |
|  | 21x + 77y + 100 = 0 |
|  | 99x – 27y + 30 = 0 |
|  | 99x + 27y + 30 = 0 |
|  | 21x – 77y – 100 = 0 |

Equation to the line passing through the point (-4,5) and perpendicular to 3x = 4y = 7 :

|  |
| --- |
|  |
|  | 3x-4y+32=0 |
|  | 4x+3y+1= 0 |
|  | 3x+4y-8=0 |
|  | 4x-3y+31=0 |

If  \theta is the angle between two straight lines represented by  ax^2 \ + \ 2hxy \ + \ by^2 = 0 then :

|  |
| --- |
|  |
|  | tan \ \theta =  \cfrac{2 \sqrt{h^2 + ab}}{a \ + \ b} |
|  | cos \ \theta =  \cfrac{2 \sqrt{h^2 \ - \ ab}}{a \ + \ b} |
|  | tan \ \theta =  \cfrac{\sqrt{h^2 \ - \ ab}}{a \ + \ b} |
|  | tan \ \theta =  \cfrac{2 \sqrt{h^2 \ + \ ab}}{a \ + \ b} |

The real part of cos h  (\alpha \ + \ i \beta ) :

|  |
| --- |
|  |
|  | sin \ \alpha \ sin \ h \beta |
|  | cos \ \alpha \ cos \ h \beta |
|  | 2 \ cos \ n \theta |
|  | cos \ h \alpha \ cos \ \beta |

If z = cos  \theta i sin  \theta, then the value of  z^n \ + \ \cfrac{1}{z^n} will be :

|  |
| --- |
|  |
|  | sin \ 2n\theta |
|  | 2 \ sin \ n\theta |
|  | 2 \ cos \ n\theta |
|  | cos \ 2n\theta |

If  \alpha \ and \ \beta are the roots of the equation  x^2 – 2x + 4 = 0 then the value of  \alpha^n \ + \ \beta^n will be :

|  |
| --- |
|  |
|  | i2^{n+1} \ sin \ (n\pi/3) |
|  | i2^{n+1} \ cos \ (n\pi/3) |
|  | i2^{n-1} \ sin \ (n\pi/3) |
|  | 2^{n-1} \ cos \ (n\pi/3) |

 [sin \ (\alpha \ + \ \theta ) -e^{ai}  sin \ \theta ]^n is equal to :

|  |
| --- |
|  |
|  | cos^n \ \alpha \ e^{in\theta} |
|  | sin^n \ \alpha \ e^{in\theta} |
|  | cos^n \ \alpha \ e-^{in\theta} |
|  | sin^n \ \alpha \ e^{-in\theta} |

If A is a skew symmetric matrix of second order and C is a column matrix of second order then CAC is equal to :

|  |
| --- |
|  |
|  | [0] |
|  | [1] |
|  | \left [\overset{0 \ 1}{1 \ 0} \right ] |
|  | \left [\overset{1 \ 0}{0 \ 1} \right ] |

If A =  \left [\overset{3 \ 1}{-1 \ 2} \right ] and I  \left [\overset{1 \ 0}{0 \ 1} \right ] then the correct statement is :

|  |
| --- |
|  |
|  | A^2 +5A - 7I = 0 |
|  | -A^2 +5A - 7I = 0 |
|  | A^2 -5A + 7I = 0 |
|  | A^2 +5A + 7I = 0 |

If A and B are the two matrices of the same order and  A^2-b^2 = (A+B ) (A-B) , then the correct statement will be :

|  |
| --- |
|  |
|  | A’B’ = AB |
|  | AB=BA |
|  | A^2+B^2 \ = \ A^2-B^2 |
|  | none of these |

The value of the determinant  \Bigg |\overset{a-b-c}{\underset{2c}{2b}}  \overset{2a}{\underset{2c}{b-c-a}}  \overset{2a}{\underset{c-a-b}{2b}}\Bigg | will be :

|  |
| --- |
|  |
|  | (a-b-c) \ (a^2+b^2+c^2) |
|  | (a+b+c)^3 |
|  | (a+b+c)(ab+bc+ca) |
|  | none of these |

If  (1 + x)^n  = \ C_0 + C_1 x + C_2 x^2 + …+  C_nx^n, then  C_0-C_1+C_2-C_3 \ +....+(-1)^n \ C_n is equal to :

|  |
| --- |
|  |
|  | 3^n |
|  | 2^n |
|  | 1 |
|  | 0 |

The term independent of x in the expansion  \Bigg [of x + \cfrac{1}{x} \Bigg ]^{2n} is :

|  |
| --- |
|  |
|  | \cfrac{1.3.5........(2n-1)}{n!} \ . 2^{n-1} |
|  | \cfrac{1.3.5........(2n-1)}{n!} \ . 2^n |
|  | a.3.5......(2n-1)} \ . 2^n |
|  | none of these |

 (1 - x)^3 is equal to :

|  |
| --- |
|  |
|  | x^3+3x^2+3x-1 |
|  | x^3-3x^2+3x-1 |
|  | x^3-3x^2-3x+1 |
|  | x^3+3x^2+3x+1 |

If n  \in N then  \overset{n}{m=1} m2 is equal to :

|  |
| --- |
|  |
|  | \cfrac{m(m+1)(2m+1)}{6} |
|  | \cfrac{n(n-1)(2n-1)}{6} |
|  | \cfrac{m((m-1)(2m-1)}{6} |
|  | \cfrac{n(n+1)(2n+1)}{6} |

If A.M. and H.M. between two numbers are 27 and 12 respectively then their G.M. is:

|  |
| --- |
|  |
|  | 9 |
|  | 18 |
|  | 24 |
|  | 36 |

f  \cfrac{1}{q+r} \ , \cfrac{1}{r+p} \ ,  \cfrac{1}{p+q} \ , are in A.P. then :

|  |
| --- |
|  |
|  | p2,q2, r2 are in A.P. |
|  | p,q,r are in A.P. |
|  | p,q,r are in G.P. |
|  | \cfrac{1}{p} \ , \cfrac{1}{q} \ ,  \cfrac{1}{r} , \ are \ in \ A.P. |

If  \alpha \ and \ \beta are the roots of the equation  x^2 – ax + b = 0 and  v_2 \ = \ \alpha^n \ + \ \beta^n then :

|  |
| --- |
|  |
|  | v_n+1 = av_n + bv^{n-1} |
|  | v_{n+1} = bv_n - av_{n-1} |
|  | v^{n+1} = av_n - bv_{n-1} |
|  | v^{n+1} = bv_n + av_{n-1} |

If  \alpha \ and \ \cfrac{1}{\alpha\alpha} are the roots of the equation  5x^2+13x+k = 0 then k will be:

|  |
| --- |
|  |
|  | 5 |
|  | -5 |
|  | 13 |
|  | 1 |

The value  i^3-i^5-i^{10}-i^{16} will be :

|  |
| --- |
|  |
|  | 0 |
|  | i |
|  | – 2 – 2i |
|  | 2 – 2i |

A coin tossed m + n (m > n) , times then the probability that the head appears m times continuosly is :

|  |
| --- |
|  |
|  | \cfrac{m+n}{2^{m+n}} |
|  | \cfrac{n+2}{2^{m+1}} |
|  | \cfrac{m}{2^{m+n}} |
|  | \cfrac{m+2}{2^{n+1}} |

For any two events A and B if P  (A \cup B) = 5/6, P  (A \cap B) = 1/3, P(B) = ½ then P(A) is :

|  |
| --- |
|  |
|  | ½ |
|  | 2/3 |
|  | 1/3 |
|  | none of these |

If M and N are any two events , then the probability of happening exactly one event is:

|  |
| --- |
|  |
|  | P(M) + P(N) – P(MN) |
|  | P(M) + P(N) – 2P(MN) |
|  | P(M) + P(N) + 2P(MN) |
|  | none of these |

A bag contains 3 white and 5 black balls. One ball is drawn at random. Then the probability that it is black is :

|  |
| --- |
|  |
|  | \cfrac{1}{8} |
|  | \cfrac{3}{8} |
|  | \cfrac{5}{8} |
|  | \cfrac{3}{5} |

A box contains 100 bulbs, out of these 10 are used. 5 bulbs are choosen at random. Then the probability that no one is fused is :

|  |
| --- |
|  |
|  | \left [\cfrac{9}{10} \right ]^5 |
|  | \cfrac{^{90}C_5}{^{100}C_5} |
|  | \left [\cfrac{1}{2} \right ]^5 |
|  | 10^{-5} |

For any two events A and B the correct statement is :

|  |
| --- |
|  |
|  | P \ (A \cap B) \le P (A) + P \ (B) |
|  | P \ (A \cap B) \le P (A) + P \ (B) \ - 1 |
|  | P \ (A \cap B) \ge P (A) + P \ (B) \ - 1 |
|  | P \ (A \cap B) \ge P (A) + P \ (B) |

For any non zero vector  \overset{\rightarrow \rightarrow}a  the correct statement is :

|  |
| --- |
|  |
|  | \overset{\rightarrow \rightarrow}a.a \le 0 |
|  | \overset{\rightarrow \rightarrow}a.a = 0 |
|  | \overset{\rightarrow \rightarrow}a.a > 0 |
|  | \overset{\rightarrow \rightarrow}a.a \ge 0 |

 \overrightarrow{a.(} \overrightarrow{b}\overrightarrow{X}  \overrightarrow{c)} = 0 then the correct statement is :

|  |
| --- |
|  |
|  | out of  \overrightarrow{a,} \overrightarrow{b,}  \overrightarrow{c,} any two vectors are parallel |
|  | \overrightarrow{a,} \overrightarrow{b,}  \overrightarrow{c,} are coplanar |
|  | any two are equal  \overrightarrow{a,} \overrightarrow{b,}  \overrightarrow{c,} |
|  | at least one above statement is correct |

If  \overrightarrow{A} \overrightarrow{X}  \overrightarrow{B}  \overrightarrow{=} 0 where  \overset{\rightarrow \rightarrow}A  and \ \overset{\rightarrow \rightarrow}B are non zero vectors then :

|  |
| --- |
|  |
|  | \overset{\rightarrow}A\ and \  \overset{\rightarrow}B are perpendicular to each other |
|  | the angle between  \overset{\rightarrow}A\  and\ \overset{\rightarrow}B\ is\ \pi |
|  | \overset{\rightarrow}A\  and \ \overset{\rightarrow}B parallel vectors |
|  | \overset{\rightarrow}B is unit vector |

If 2i + j – k and i – 4j +  \lambda k are perpendicular to each other then  \lambda is equal to:

|  |
| --- |
|  |
|  | – 3 |
|  | – 2 |
|  | – 1 |
|  | 0 |

If  \cfrac{d}{dx} \ \ \Phi (x) = f(x) then  \overset{2}{1} f(x) dx is equal to :

|  |
| --- |
|  |
|  | f(1) - f(2) |
|  | \Phi (1) \ - \ \Phi(2) |
|  | f(2) -f(1) |
|  | \Phi (2) \ - \ \Phi(1) |

If f (a – x) = f(x), then  \overset{a}{0} xf(x) dx is equal to :

|  |
| --- |
|  |
|  | \overset{a}{0} \ f(X)dX |
|  | a \overset{a/2}{0} \ f(X)dX |
|  | a \overset{a}{0} \ f(X)dX |
|  | none of these |

 \overset{a}{-a} f(x)dx = 2  \overset{a}{0} f(x)dx when :

|  |
| --- |
|  |
|  | f(2a-x) = – fx |
|  | f(2a-x)=f(x) |
|  | f(-x)=-f(x) |
|  | f(-x)=f(x) |

 \overset{2}{0} | 1 – x|dx is equal to :

|  |
| --- |
|  |
|  | 0 |
|  | 1 |
|  | \cfrac{3}{2} |
|  | \cfrac{1}{2} |

For any integer n the value of  \overset{\pi \pi}{0}  e^{cos2} \ cos^3 (2n+1)x dx will be:

|  |
| --- |
|  |
|  | e^2 |
|  | 0 |
|  | 1 |
|  | e |

 \cfrac{sin \ 2X}{sin^4 X + \ cos^4 \ X} dx is equal to :

|  |
| --- |
|  |
|  | 2 \ tan^{-1} (tan^2 X ) + C |
|  | tan^{-1} (X \ tan^2 X ) + C |
|  | tan^{-1} (tan^2 X ) + C |
|  | none \ of \  these |

 \cfrac{1}{X^5} dx is equal to :

|  |
| --- |
|  |
|  | - \ \cfrac{1}{5X^4} + C |
|  | - \ \cfrac{1}{5X^6} + C |
|  | - \ \cfrac{1 \ + \ C}{4X^4} + C |
|  | \cfrac{-5}{X^6} + C |

The function sin x + cos x is maximum when x is equal to :

|  |
| --- |
|  |
|  | \cfrac{\pi}{6} |
|  | \cfrac{\pi}{4} |
|  | \cfrac{\pi}{3} |
|  | \cfrac{\pi}{2} |

If the normal to a curve is parallel to axis of x, then the correct statement is :

|  |
| --- |
|  |
|  | \cfrac{dX}{dy} = - 1 |
|  | \cfrac{dX}{dy} |
|  | \cfrac{dX}{dy} = 0 |
|  | \cfrac{dy}{dX} = 0 |

 \cfrac{d}{dX} \ sin^{-1} x is equal to :

|  |
| --- |
|  |
|  | - \cfrac{1}{\sqrt{X^2 \ - 1}} |
|  | \cfrac{1}{\sqrt{X^2 \ - 1}} |
|  | \cfrac{1}{\sqrt{1 - X^2}} |
|  | - \ \cfrac{1}{\sqrt{1 - X^2}} |

The differential coefficient of  e^{x-3} is :

|  |
| --- |
|  |
|  | 2X^{3} e^{x3} |
|  | 3X (e^{x3}) |
|  | e^{x3} |
|  | 3X^{2} e^{x3} |

 \cfrac{d}{dX} \ (X^X) is equal to :

|  |
| --- |
|  |
|  | X^X \ log \ (e/X) |
|  | X^X \ log \ eX |
|  | log \ eX |
|  | X^X \ log \ X |

 \overset{lim}{X \rightarrow a} [f(x),g(x)] will exist, when :

|  |
| --- |
|  |
|  | \overset{lim}{X \rightarrow a}  \cfrac{f(X)}{g(X)} is exists |
|  | \overset{lim}{X \rightarrow a}  [f(X)]^{g(X)} is exists |
|  | \overset{lim}{X \rightarrow a} f (x) or lim g(x) is exists |
|  | \overset{lim}{X \rightarrow a} f (x) and  \overset{lim}{X \rightarrow a} g(x) both exists |

 \overset{lim}{X \rightarrow 0}  \cfrac{sin \ X}{X} is equal to :

|  |
| --- |
|  |
|  | 2 |
|  | - 1 |
|  | 1 |
|  | 0 |

If f(x) = sin [x] , [x]  \ne 0 where [x] is a greatest integer less or equal to x then  \overset{lim}{X \rightarrow 0} f(x) is equal to :

|  |
| --- |
|  |
|  | - 1 |
|  | 0 |
|  | 1 |
|  | does not exist |

If A = {-2, -1, 0, 1,2} and f:  A \rightarrow R such that f(X) =  X^2 + 1, then the range of f will be:

|  |
| --- |
|  |
|  | \Big\{  1, \overset{+}{-} \ 2, \overset{+}{-} 5  \Big\} |
|  | {1,2,5} |
|  | {-2, -1, 0, 1,2} |
|  | none of these |

The point (at3, at2) will lies on the curve :

|  |
| --- |
|  |
|  | X^3 \ = \ ay^2 |
|  | X^3 \ = \ ay |
|  | y^2 \ = \ ac |
|  | y^2 \ = \ aX^2 |

The diameter of the circle  X^2 \ + \ y^2 + 4x – 6y = 0, is :

|  |
| --- |
|  |
|  | \sqrt{52} |
|  | \sqrt{13} |
|  | \sqrt{26} |
|  | \sqrt{20} |

The pole of the line  \tau x + my + n = 0 w.r.t. the circle  X^2 \ + \ y^2 \ = \ a^2 is :

|  |
| --- |
|  |
|  | \Big[- \cfrac{n}{1} \ a^2 \ ,  - \cfrac{n}{m} \ a^2 \Big] |
|  | \Big[- \cfrac{a}{na^2} ,  \cfrac{m}{ma^2} \Big] |
|  | \Big[- \cfrac{1}{n} \ a^2 \ ,  \cfrac{m}{n} \ a^2 \Big] |
|  | \Big[- \cfrac{1}{n} \ a^2 \ ,  - \cfrac{m}{n} \ a^2 \Big] |

Two dice thrown together then the probability of getting a sum of 7, is :

|  |
| --- |
|  |
|  | \cfrac{7}{36} |
|  | \cfrac{6}{36} |
|  | \cfrac{5}{36} |
|  | \cfrac{8}{36} |

For any two events A and B, P  (A \cap B) is equal :

|  |
| --- |
|  |
|  | P(A) - P(A \cap B) |
|  | P (A) - \overset{\cap}{P(A \cap B)} |
|  | P(A) - P(A \cup B) |
|  | P (A) + \overline{(A} \ \overline{\cap B}) |

If A and B are two events, then  P \overline{(A \ / \ B)} is equal to :

|  |
| --- |
|  |
|  | P \overline{(A)} \ /P \overline{(B)} |
|  | \cfrac{1-P(A+B)}{\overline{P(B)}} |
|  | \underline{1- P(AB)} |
|  | 1- P(A/B) |

If A  \le B, then  B \cup A will be :

|  |
| --- |
|  |
|  | [0] |
|  | \Phi |
|  | A |
|  | B |

 P \Bigg[  \cfrac{\overline{A}}{A \cup B}  \Bigg] is equal :

|  |
| --- |
|  |
|  | \cfrac{P(A)}{P(A \cup B)} |
|  | \cfrac{P (\overline A \cap B)}{P(A \cap B)} |
|  | \cfrac{P \overline{(A)}}{P(A \cup B)} |
|  | \cfrac{P \overline{(B)}}{P(A \cup B)} |

The period of  sin^4 \ X+cos^4 x will be :

|  |
| --- |
|  |
|  | \cfrac{3 \pi}{2} |
|  | 2 \pi |
|  | \pi |
|  | \cfrac{\pi}{2} |

 \overrightarrow{a} \overrightarrow{X} \overrightarrow{(b} \overrightarrow{X}  \overrightarrow{c)} \overrightarrow{is} equal to :

|  |
| --- |
|  |
|  | \overrightarrow{(a} . \overrightarrow{c)} \overrightarrow{b} - \overrightarrow{(a} .  \overrightarrow{b)} . \overrightarrow{c} |
|  | \overrightarrow{(a} . \overrightarrow{c)} \overrightarrow{b} + \overrightarrow{(a} .  \overrightarrow{b)} . \overrightarrow{c} |
|  | \overrightarrow{(a} . \overrightarrow{b)} \overrightarrow{c} + \overrightarrow{(a} .  \overrightarrow{b)} . \overrightarrow{c} |
|  | \overrightarrow{(a} . \overrightarrow{b)} \overrightarrow{c} - \overrightarrow{(a} .  \overrightarrow{c)} . \overrightarrow{b} |

The angle between the vectors (i+j) abd (j+k) is :

|  |
| --- |
|  |
|  | \cfrac{\pi}{4} |
|  | 0 |
|  | \cfrac{\pi}{-4} |
|  | \cfrac{\pi}{3} |

The area of the region bounded by the curves y = x sin x, axis of x, x= 0 and  X \ = \ 2 \pi  will be :

|  |
| --- |
|  |
|  | 8 \pi |
|  | 4 \pi |
|  | 2 \pi |
|  | \pi |

 \overset{\pi^{/2}}{0} log sin x dx is equal to :

|  |
| --- |
|  |
|  | \pi \ log \Bigg[\cfrac{1}{-2} \Bigg] |
|  | \pi \ log \ 2 |
|  | \pi \ log \Bigg[\cfrac{1}{2} \Bigg] |
|  | \cfrac{\pi}{2} \ log \ 2 |

 \overset{b}{a} f(x) dx is equal to :

|  |
| --- |
|  |
|  | \overset{b}f (X-a-b) dX |
|  | \overset{a}f(a-X )dX |
|  | \overset{b}f(a+b-X )dX |
|  | noneof these |

 \overset{\pi^{/2}}{0} sin 2x log tan x dx is equal to :

|  |
| --- |
|  |
|  | 2 \pi |
|  | \pi |
|  | 0 |
|  | \pi /2 |

 \overset{\pi \pi}{0} \ cos^3 x dx is equal to :

|  |
| --- |
|  |
|  | 4 \pi |
|  | 2 \pi |
|  | \pi |
|  | 0 |

cot x dx is equal to :

|  |
| --- |
|  |
|  | log tan x + C |
|  | log sec x + C |
|  | log cosec x + C |
|  | log sin x + C |

If z = x + y iy then |z – 5| is equal to :

|  |
| --- |
|  |
|  | \sqrt{(X - y)^2 \ + \ 5^2} |
|  | \sqrt{(X - 5)^5 \ + \ y^2} |
|  | \sqrt{X^2 \ + (y \ - \ 5)^2} |
|  | \sqrt{(X - 5)^5 \ + (y \ - \ 5)^2} |

If  \alpha \ and \ \beta are the roots of the equation  4X^2 \ + \ 3X \ + \ 7 = 0 then  \cfrac{1}{\alpha \alpha}  + \cfrac{1}{\beta \beta} is equal is :

|  |
| --- |
|  |
|  | \cfrac{7}{3} |
|  | \cfrac{2}{7} |
|  | \cfrac{-3}{7} |
|  | \cfrac{3}{7} |

2,357 is equal to :

|  |
| --- |
|  |
|  | \cfrac{2379}{999} |
|  | \cfrac{2355}{999} |
|  | \cfrac{2355}{997} |
|  | none of these |

If the second term of a G.P. is 2 and the sum of its infinite terms is 8, then its first therm is :

|  |
| --- |
|  |
|  | 2 |
|  | 4 |
|  | 6 |
|  | 8 |

(1+2+3+….+n) is equal to :

|  |
| --- |
|  |
|  | \Bigg[\cfrac{n(n \ + \ 1)}{2} \Bigg]^2 |
|  | n^2 |
|  | \cfrac{n(n \ + \ 1)}{2} |
|  | \cfrac{n(n \ - \ 1)}{2} |

For an  \in N \ 2^{3 \ n} – 7n – 1 is divisible by :

|  |
| --- |
|  |
|  | 50 |
|  | 49 |
|  | 51 |
|  | 48 |

If x = 2 +  2^{1/3} \ +\ 2^{2/3} , then  X^3 \ - \ 6X^2 + 6x is equal to :

|  |
| --- |
|  |
|  | 0 |
|  | 1 |
|  | 2 |
|  | 3 |

If  (1 - X)^n = C_0 \ + \ C_1X + ….+  C_nX^n then  C_1 \ + \ 2C_2 \ + \ 3C_3 …..  nC_n is equal is :

|  |
| --- |
|  |
|  | n.2^{n-1} |
|  | (n - 1)^ \ {2n-1} |
|  | (n + 1)^ \ {2n} |
|  | 2^{n-1} \ - \ 1 |

Determinate  |  \overset{c \ - \ id}{\underset{1 \ + \ ib}}  \overset{a \ - \ id}{\underset{c \ + \ id}}  |is equal to :

|  |
| --- |
|  |
|  | a^2-b^2+c^2+d^2 |
|  | a^2+b^2-c^2-d^2 |
|  | (a^2+b^2) \ (c^2+d^2) |
|  | (a+b) \ (a-b) |

 \Bigg |\overset{43}{\underset{17}{35}}  \overset{1}{\underset{3}{7}}  \overset{6}{\underset{2}{4}}\Bigg |   
  
is equal to :

|  |
| --- |
|  |
|  | - 6 |
|  | - 110 |
|  | 0 |
|  | 150 |

If A =  \bigg[ \overset{1}{0} \overset{0}{1} \bigg]then A2 is equal to:

|  |
| --- |
|  |
|  | \bigg[ \overset{0}{0} \overset{0}{0} \bigg] |
|  | \bigg[ \overset{0}{0} \overset{0}{1} \bigg] |
|  | \bigg[ \overset{1}{0} \overset{0}{1} \bigg] |
|  | \bigg[ \overset{1}{1} \overset{1}{1} \bigg] |

If A =  \bigg[ \overset{1}{0} \overset{1}{1} \bigg]then  A^ \ n is equal to :

|  |
| --- |
|  |
|  | \bigg[\overset{1}{0} \overset{n^n}{1} \bigg] |
|  | \bigg[\overset{n}{0} \overset{n}{n} \bigg] |
|  | \bigg[\overset{1}{0} \overset{n}{1} \bigg] |
|  | \bigg[\overset{1}{0} \overset{1}{1} \bigg] |

If A and B are the invertible matrix of the required order then the value of  (AB)^{-1} will be :

|  |
| --- |
|  |
|  | [(AB)']^{-1} |
|  | A^{-1} B^{-1} |
|  | B^{-1}A^{-1} |
|  | (BA)^{-1} |

The value of sin 3x is :

|  |
| --- |
|  |
|  | 4 \ sin \ X \ - \ 3 sin^3 \ X |
|  | 4 \ sin \ X \ + \ 3 sin^3 \ X |
|  | 3 \ sin \ X \ - \ 4 \ sin^3 \ X |
|  | 3 \ sin \ X \ + \ 4 \ sin^3 \ X |

The imaginary roots of  (-1)^{1/3} is :

|  |
| --- |
|  |
|  | \cfrac{1 \ \underline{+}\ \sqrt{3i}}{4} |
|  | \underline{+} \ i |
|  | \cfrac{-\ 1 \ \underline{+}\ \sqrt{3}}{2} |
|  | \cfrac{1 \ \underline{+}\ \sqrt{3i}}{2} |

The argument and modulus of the  e^\ {sin\ i \theta} is :

|  |
| --- |
|  |
|  | 1, \ sin\ h \theta |
|  | 1, \ \pi/2 |
|  | e^\ {cos} \ \theta ,\ sin\ h \theta |
|  | e^\ {sin} \ \theta ,\ sin\ h \theta |

The minimum distance of a point (x, y) from a line ax + by + c = 0, is :

|  |
| --- |
|  |
|  | \cfrac{|aX1 + by1 + c|}{\sqrt{a^2 + b^2}} |
|  | \cfrac{|aX1 + by1 + c|}{\sqrt{a^2 + b^2-c}} |
|  | \cfrac{|aX1 + by1 + c|}{\sqrt{a^2 + b^2+c^2}} |
|  | \cfrac{|aX1 + by1 + c|}{\sqrt{a^2 + b^2+c}} |

A straight line through ( 1, 1) and parallel to the line 2x + 3y – 7 = 0 is :

|  |
| --- |
|  |
|  | 2x + 3y + 5 = 0 |
|  | 3x – 2y + 7 = 0 |
|  | 3x + 2y – 8 = 0 |
|  | 2x + 3y – 5 = 0 |

Equation of the straight line passing through the points (-1, 3) and (4, -2) is :

|  |
| --- |
|  |
|  | x- y = 3 |
|  | x + y = 3 |
|  | x – y = 2 |
|  | x + y = 2 |

The general equation of circle passing through the point of intersection of circle S = 0 and line P = 0, is :

|  |
| --- |
|  |
|  | S\ +\ \lambda P = 0, \lambda \in R |
|  | 6S + 4P = 0 |
|  | 3S + 4P = 0 |
|  | 4S + 5P = 0 |

The equation of the radial axis of two circle  X^2 + y^2 + 2g_1X + 2f_1y + c_1 = 0 and  X^2 + y^2 + 2g_2X + 2f_2y + c_2 = 0 , is :

|  |
| --- |
|  |
|  | 2\ (g_1 - g_2)\ X + 2  (f_1 - f_2)\ y - c_1 - c_2 =0 |
|  | 2\ (g_2 - g_1)\ X + 2  (f_1 - f_2)\ y + c_1 - c_2 =\ 0 |
|  | 2\ (g_1 - g_2)\ X + 2  (f_1 - f_2)\ y + c_1 - c_2 =\ 0 |
|  | 2\ (g_1 - g_2)\ X + 2  (f_1 - f_2)\ y + c_2 - c_1 =\ 0 |

If f (x) = cos (log x), then f(x) f(y) – 1  [f \overset{(\underline X)}{y} - f (Xy) ] is equal to :

|  |
| --- |
|  |
|  | 0 |
|  | f(x+y) |
|  | f \overset{(\underline X)}{y} |
|  | f(xy) |

If f(x) =  \cfrac{X}{X - 1} = y, then the value of f(y) is :

|  |
| --- |
|  |
|  | 1 –x |
|  | x + 1 |
|  | x – 1 |
|  | x |

 \overset{lim}{n \rightarrow \infty}  \bigg[\cfrac{1^2}{13 + n3}  + \cfrac{2^2}{23 + n3}  + \cfrac{1}{2n} \bigg] is equal to :

|  |
| --- |
|  |
|  | \cfrac{1}{2} \ log \ 2 |
|  | 3 \ log \ 2 |
|  | \cfrac{1}{3} \ log \ 2 |
|  | \cfrac{1}{2} \ log \ 3 |

 \overset{lim}{X \rightarrow \infty}  \cfrac{X2 - a2}{X - a} is equal to :

|  |
| --- |
|  |
|  | \infty |
|  | 0 |
|  | a |
|  | 2a |

 \cfrac{d}{dX} \ (2^X) is equal to :

|  |
| --- |
|  |
|  | 1 |
|  | 2^X \ log \ 2 |
|  | x log 2 |
|  | 0 |

Differential coefficient of  X^3\ w.r.t. \ X^2 will be :

|  |
| --- |
|  |
|  | \cfrac{3}{2_X} |
|  | \cfrac{2}{3_X} |
|  | \cfrac{3}{2} \ X |
|  | \cfrac{3X^2}{2} |

 \cfrac{d}{dX} (tan x ) is equal to :

|  |
| --- |
|  |
|  | cosec^2 \ X |
|  | sec x tan x |
|  | cosec x cot x |
|  | sec^2 \ X |

The coordinates of the point where the tangent to the curve x2 + y2 – 2x – 3 = 0 is parallel to the axis of x is :

|  |
| --- |
|  |
|  | 1. \ \underline{+} \ \sqrt{3} |
|  | (1,0) |
|  | 1, \ \underline{+} \ 2 |
|  | (1. \ \underline{+}  \sqrt{2} ) |

The point at which tangent to the curve y =  \tau^{2X} at the point (0, 1) meets the x-axis is :

|  |
| --- |
|  |
|  | (1, 0) |
|  | (- ½, 0) |
|  | (2, 0) |
|  | (0, 2) |

Maximum value of slope of a tangent to the curve y =  - X^3 \ +\ 3X^2 + 2x – 27 will be :

|  |
| --- |
|  |
|  | 11 |
|  | - 4 |
|  | 5 |
|  | 2 |

m  \cfrac{sin\ \sqrt{X}}{\sqrt{X}} dx is equal to :

|  |
| --- |
|  |
|  | -\ 2\ cos \ \sqrt{X} \ + \ C |
|  | 2\ cos \ \sqrt{X} \ + \ C |
|  | 2\ sin \ \sqrt{X} \ + \ C |
|  | sin \ \sqrt{X+} C |

Correct statement is :

|  |
| --- |
|  |
|  | (AB)^{-1} \ = \ B^{-1} A^{-1} |
|  | (AB)^{-1} \ = \ A^{-1} B^{-1} |
|  | (AB)^T \ = \ A^T B^T |
|  | (AB)^1 \ = \ A^1 B^1 |

If the matrix P =\bigg[\overset{1}{-3}\ \underset{0}{2} \bigg] and Q \bigg[\overset{-1}{2}\ \underset{3}{0} \bigg]then the correct statement is :

|  |
| --- |
|  |
|  | P\ +\ Q \ = \ I |
|  | PQ\ \ne \ QP |
|  | Q^2 \ = \ Q |
|  | P^2 \ = \ P |