

MATHEMATICS

- 0 is _____.
A. A natural number
B. A whole number
C. An positive integer
D. A negative integer
- If two sets have no common element then they are called _____.
A. Overlapping sets
B. Disjoint sets
C. Complementary sets
D. Equivalent sets
- $\begin{bmatrix} 9 & 0 \\ 0 & 9 \end{bmatrix}$ is a _____ matrix.
A. Scalar
B. Diagonal
C. Null
D. Identity
- If roots of the equation $ax^2+bx=0$ are real and unequal the,
A. $ab>0$
B. $ab<0$
C. $a=0$
D. $ab=0$
- a square matrix is called _____ matrix if all the elements below the principal diagonal are 0;
A. Upper triangular
B. Symmetric
C. Skew hermit ion
D. Diagonal
- The conditional equation $\frac{1}{x}=x$ holds if $x=$ _____.
A. $1/3$
B. $\frac{1}{2}$
C. $\frac{1}{4}$
D. 1
- If x, y and z are the three consecutive numbers in an A.P. which one the following is true?
A. $x^2+y^2=z^2$
B. $x^2+z^2=y^2$
C. $z=1/2(x+y)$
D. $y=x+z$

- Which term of the A.P 4, 1, -2, is -77?
A. 24^{th}
B. 26^{th}
C. 28^{th}
D. 30^{th}
- A dice is thrown. What is the probability to get an odd number?
A. 1
B. $\frac{1}{2}$
C. $\frac{1}{3}$
D. $\frac{2}{3}$
- The middle term in the expansion of $(a+b)^{20}$ is;
A. 10^{th} term
B. 11^{th} term
C. 12^{th} term
D. 13^{th} term
- $\cos(-1980^\circ)=$ _____.
A. 0
B. -1
C. $-(1/2)$
D. $\sqrt{3}/2$
- $\sin 3\theta=$ _____.
A. $3\sin\theta - 4\cos^3\theta$
B. $4\cos^3\theta - 3\sin\theta$
C. $4\sin^3\theta - 3\cos\theta$
D. $3\sin\theta - 4\sin^3\theta$
- The period of $5 \tan x/3$ is;
A. π
B. 2π
C. 3π
D. 4π
- $\tan(45^\circ + \theta)=$ _____.
A. $\frac{\tan\theta + 1}{1 - \tan\theta}$
B. $\frac{1 + \tan\theta}{1 - \tan\theta}$
C. $\frac{1 + \tan\theta}{1 - \tan^2\theta}$
D. $\frac{1 - \tan\theta}{1 + \tan\theta}$

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- A triangle has _____ important elements;
A. 3
B. 4
C. 5
D. 6
- $r_1, r_2, r_3, r_4=$ _____.
A. Δ^2
B. Δ
C. abc/Δ
D. abc
- The domain of $Y=\sin^{-1}x$ is
A. $(-\pi, \pi)$
B. $(-\pi/2, \pi/2)$
C. $(-1, 1)$
D. None

- Trigonometric equation contains _____ trigonometric functions;
A. At least one
B. At most one
C. Exactly one
D. None
- The solution of $\tan^2 x=3$, which lies in $(0, \pi)$
A. $\frac{4\pi}{3}, \frac{5\pi}{3}$
B. $\frac{\pi}{3}, \frac{2\pi}{3}$
C. $\frac{4\pi}{3}, \frac{\pi}{3}$
D. None
- For solution of trigonometric equation, first we find the solution over the interval whose width is equal to its _____.
A. Domain
B. Range
C. Period
D. None

- $F(x)=x^2-4x+1$ is
A. Trigonometric function
B. Logarithm function
C. Exponential function
D. Algebraic function
- $\cosh^2 x - \sinh^2 x =$ _____.
A. -2
B. -1
C. 1
D. 2

- If $3x+4y+7=0 \rightarrow \frac{dy}{dx}=$ _____.
A. $\frac{1}{4}$
B. $-3/4$
C. $-4/3$
D. 0
- The minimum value of the function $f(x)=x^2-x-2$ is
A. $-9/2$
B. $-9/4$
C. -1
D. 0

- $\int \frac{2x-1}{x^2-x-1} dx =$ _____.
A. $\ln(2x-1)+c$
B. $(2x-1)+c$
C. 0
D. $\ln(x^2-x+1)+c$

- If $\frac{d}{dx}(\tan^3 x) = 3 \left[\frac{\tan x}{\cos^2 x} \right]$, then $3 \int_0^{\pi/4} \left(\frac{\tan x}{\cos^2 x} \right)^2 dx =$ _____.
A. $1/3$
B. $2/3$
C. 1
D. 3

- The ratio in which y axis divides the line joining the points (2, -3) & (-5, 6) is
A. 2:3
B. 2:5
C. 1:2
D. 3:5

- The Directrix of the parabola $x^2 = -8y$ is
A. $x+2=0$
B. $x-2=0$
C. $y+2=0$
D. $y-2=0$
- The line segment joining the foci is the _____ of ellipse
A. Vertex
B. Center
C. Directrix
D. Major axis
- (0,0) is not in the solution of Inequality
A. $7x+2y>3$
B. $x-3y \geq 0$
C. $3x-5y \geq 7$
D. $3x+5y \leq 7$