NEW STANDARD ACADEMY

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CLASS 11 (Maths) DPP (Academy)

1. $\frac{sin\theta}{1-cot\theta}+\frac{cos\theta}{1-tan\theta}=$
2. $The\ value\ of\ \frac{tan^2 20°-sin^2 20°}{tan^2 20°.\ sin^2 20°}$ is
3. $if\ \frac{sin^2x-2cos^2x+1}{sin^2\ x+2cos^2x-1}$ =4, then the value of 2 $\tan^2$x is
4. If sin θ, tan $\theta\ and$ cos θ are in G.P., then $4\sin^2\theta-3\sin^4\theta+\sin^6\theta$ =
5. $If\ tan\theta$-cos θ=a and sin θ+cos θ= b, then $(b^2-1)^2(a^2+4)$ is equal to
6. $If\ 13\ sec\theta$- 5tan θ=13 then the sum of possible values of 13 tan θ-5 Sec $\theta\ is$
7. If $\frac{cos\alpha}{cosA}+\frac{sin\alpha}{sinA}=\frac{cos\beta}{cosA}+\frac{sin\beta}{sinA}=1$, Where $\alpha\neq\beta$, then $\left|\frac{cos\alpha cos\beta}{cos^2A}+\frac{sin\alpha sin\beta}{sin^2A}\right|=$
8. The two legs of a right triangle measure Sin θ+ sin $\left(\frac{3\pi}{2}-\theta\right)$ and cosθ-cos$\left(\frac{3\pi}{2}-\theta\right)$.the length of its hypotenuse is
9. The sum $\left(\sin\frac{\pi}{9}+\sin\frac{2\pi}{9}+sin\frac{3\pi}{9}+\cdots+sin\frac{17\pi}{9}\right)$ equals to
10. The value of ($\cos^2 73°+cos^2 47°-\sin^2 43°+\sin^2 107°$)is equal
11. If ABCD is cyclic quadrilateral such that 12 tan A-5=0 and 5cos B+3=0, then the quadratic equation whose roots are casB+3=0 then the quadratic equation whose roots are cosC and tan D is
12. If in a triangle ABC ,tan A +tan B +tan C has the value 6, then the value of 6cotA cotB cotC is
13. If cos $(\alpha-\beta)$+ cos $(\beta-\gamma)+\cos(\gamma-\alpha)=-\frac{3}{2}, Cos\alpha+cos\beta+cos\gamma$ =p and sin α+sin β+sin γ=q then the value of 3p+4q is
14. $\frac{2sin\theta tan\theta(1-tan\theta)2sin\theta sec^2\theta}{(1-tan\theta)^2}$
15. if p=$\frac{2sin}{1+cos\theta+sin\theta}, and\ q=\frac{cos\theta}{1+sin\theta}, then$
16. The value cas105° $+\ sin105°\ is$
17. Sin 50°- sin70° +sin10° =
18. If tan x+tan$\left(\frac{\pi}{3}+x\right)+\tan\left(\frac{2\pi}{3}+x\right)=3\ then$
19. The expression 2cos$\frac{\pi}{13}$ cos$\frac{9\pi}{13}+cos\frac{3\pi}{13}+cos\frac{5\pi}{13}$ is equal
20. $\text{Cos}^2\left(\frac{\pi}{4}-\beta\right)-sin^2\left(\alpha-\frac{\pi}{4}\right)=$

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CLASS 12 (Maths) DPP (Academy)

1. If the system of linear equations
   x+2ay+az=0
   x+3by+bz=0
   x+4cy+cz=0
   has non-zero solution ,then a,b,c are in
2. The system of homogeneous equations,
   $tx+(t+1)y+(t-1)z=0$
   $(t+1)\,x+\,ty+(t+2)z=0$
   $And\ (t-1)x+(t+2)y+tz=0$
   has a non-trivial solution for
3. The values of $\theta\ and\ \lambda$ for which the system of equations
   $(\sin\theta)x-(\cos\theta)y+(\lambda+1)z=0$
   $(\cos\theta)x+(sin\theta)y-\lambda z=0$
   And $\lambda x+(\lambda+1)y+(cos\theta)z=0$
   has non –trivial solution are
4. If the system of equations
   x-2y+z = a ;
   2x+y-2z = b ;
   and x+3y-3z = c
   has at least one solution then
5. Number of values of c for which the system of equations $cx+y+1=0;$ $x+cy+2=0;\ and\ x+y+1=0$ is consistent is__
6. If system of linear equations (a-1)x+z=α; $x+(b-1)y=\beta\ and\ y+(c-1)z=\gamma, where\ ab\ c\ \epsilon I, does\ not$ have a unique solution then maximum possible value of |a+b+c| is
7. If A-2B=$\begin{bmatrix}1 & 5\\ 3 & 7\end{bmatrix}$ and 2A-3B=$\begin{bmatrix}-2 & 5\\ 0 & 7\end{bmatrix}$,then matrix B is equal to
8. Given A=$\begin{bmatrix}1 & 3\\ 2 & 2\end{bmatrix}$,I=$\begin{bmatrix}1 & 0\\ 0 & 1\end{bmatrix}$. If A-$\lambda I$ is a singular matrix,then
9. If the trace of the matrix
   $A=\begin{bmatrix}x-1 & 0 & 2 & 5\\ 3 & x^2-2 & 4 & 1\\ -1 & -2 & x-3 & 1\\ 2 & 0 & 4 & x^2-6\end{bmatrix}$ is 0, then x is equal to
10. If A is a square matrix of order 2,then $-tr(A^2)+(tr(A))^2$ is equal to
11. Let A=$\begin{bmatrix}-5 & -8 & -7\\ 3 & 5 & 4\\ 2 & 3 & 3\end{bmatrix}$and B=$\begin{bmatrix}x\\ y\\ 2\end{bmatrix}$. $If\ AB\ is\ a\ scalar$ multiple of B then the point (x,y) lies on the line whose
12. Let A be a 2× 3 matrix whereas B be a 3×2 matrix .If det. (AB)=4 t the value of det. (BA) is
13. The number of 2× 2 matrices A, that are there with the elements as numbers satisfying $A+A^T=I$ and $AA^T=I$ is
14. If A=$\begin{bmatrix}8 & -6 & 2\\ -6 & 7 & -4\\ 2 & -4 & 3\end{bmatrix}$ and X is a non-zero column matrix such that AX=λX, where $\lambda$is a scalar then values if λcan be
15. If A=k$\begin{bmatrix}-1 & 2 & 2\\ 2 & -1 & 2\\ 2 & 2 & -1\end{bmatrix}$ is matrix such $AA^T=I$ then k is equal to
16. If the of $\prod_{k=1}^{50}\begin{bmatrix}1 & 2k-1\\ 0 & 1\end{bmatrix}$ is equal to $\begin{bmatrix}1 & r\\ 0 & 1\end{bmatrix}$,then r is equal to
17. If $(A+B)^2=A^2+B^2$ and|A|=2 then |b|=(Where A and B are matrices odd order)
18. Let A be a skew symmetric matrix such that A^2=A. Then
19. Let A and B be two square matrices of order 3 satisfying $A^2+B^{100}=(A^T)^2$. Then det (B) is equal to___
20. Let A be a Square matrix such that $A^2-5A+7I=0$.If A^5= aA +bI, then |a+b|=_____