KHAN GLOBAL STUDIES

K.G.S. campus, Near Sai Mandir, Mussalahpur Hatt, Patna – 6
Mob. : 8877918018, 8757354880

Defence (Mathematics)

By : Prashant Sir

Trigonometry DPPS-1

1. The value of $2cot^2\left(\frac{\pi}{6}\right) + 4tan^2\left(\frac{\pi}{6}\right) - 3cosec\left(\frac{\pi}{6}\right)$ is

(a) 2 (b) 4

(c) $\frac{4}{3}$ (d) $\frac{3}{4}$

2. If $\sin A - \sqrt{6}\cos A = \sqrt{7}\cos A$, then $\cos A + \sqrt{6}\sin A$ equal to

(a) $\sqrt{6}\sin A$ (b) $-\sqrt{7}\sin A$

(c) $\sqrt{6}\cos A$ (d) $\sqrt{7}\cos A$

3. If $\cos 20° - \sin 20° = p$, then $\cos 40°$ is equal to:

(a) $p^2\sqrt{2-p^2}$ (b) $p\sqrt{2-p^2}$

(c) $p + \sqrt{2-p^2}$ (d) $p - \sqrt{2-p^2}$

4. If $S_n = cos^n\theta + sin^n\theta$, then the value of $3S_4 - 2S_6$ is given by

(a) 4 (b) 0

(c) 1 (d) 7

5. $sin^2 17.5° + sin^2 72.5°$ is equal to

(a) $cos^2 90°$ (b) $tan^2 45°$

(c) $cos^2 30°$ (d) $sin^2 45°$

6. If $A + B = 45°$, then $(\cot A - 1)(\cot B - 1)$ is equal to

(a) 3 (b) $\frac{1}{2}$

(c) -1 (d) 2

7. The value of $cos^2\left(\frac{\pi}{4} + \theta\right) - sin^2\left(\frac{\pi}{4} - \theta\right)$ is

(a) 0 (b) $\cos 2\theta$

(c) $\sin 2\theta$ (d) $\cos\theta$

8. The maximum value of the function $3\cos x - 4\sin x$ is

(a) 2 (b) 3

(c) 4 (d) 5

9. If $\sin\theta = \frac{24}{25}$ and θ lies in the second quadrant, then $\sec\theta + \tan\theta$ =

(a) – 3 (b) – 5

(c) – 7 (d) – 9

10. If $\tan\theta + \sec\theta = e^x$, then $\cos\theta$ equals

(a) $\frac{(e^x + e^{-x})}{2}$ (b) $\frac{2}{(e^x + e^{-x})}$

(c) $\frac{(e^x - e^{-x})}{2}$ (d) $\frac{(e^x - e^{-x})}{(e^x + e^{-x})}$

11. If $\sec\theta + \tan\theta = p$, then $\tan\theta$ is equal to

(a) $\frac{2p}{p^2-1}$ (b) $\frac{p^2-1}{2p}$

(c) $\frac{p^2+1}{2p}$ (d) $\frac{2p}{p^2+1}$

12. If $\sin\theta_1 + \sin\theta_2 + \sin\theta_3 = 3$, then $\cos\theta_1 + \cos\theta_2 + \cos\theta_3$ =

(a) 3 (b) 2

(c) 1 (d) 0

13. $\frac{1}{4}\left[\sqrt{3}\cos 23° - \sin 23°\right] =$

(a) $\cos 43°$ (b) $\cos 7°$

(c) $\cos 53°$ (d) None of these

14. $\frac{1}{\sin 10°} - \frac{\sqrt{3}}{\cos 10°}$

(a) 0 (b) 1

(c) 2 (d) 4

15. What is the value of $\sqrt{3}\ cosec\ 20^0 - \sec 20^0$
$\sqrt{3}\ cosec\ 20^0 - \sec 20^0$ का मान क्या है

(a) $\frac{1}{4}$ (b) 4

(c) 2 (d) 1

16. What is the value of $\tan(-1575°)$?
$\tan(-1575°)$ का मान क्या है?

(a) 1 (b) $\frac{1}{2}$

(c) 0 (d) -1

17. What is the value of $1 - \sin 10° \sin 50° \sin 70°$?
$1 - \sin 10° \sin 50° \sin 70°$ का मान क्या है?

(a) $\frac{1}{8}$ (b) $\frac{3}{8}$

(c) $\frac{5}{8}$ (d) $\frac{7}{8}$

18. $cosec\, A + \cot A = \frac{2}{3} \Rightarrow \cos A =$

(a) $\frac{5}{13}$ (b) $\frac{13}{5}$

(c) $-\frac{5}{13}$ (d) $-\frac{13}{5}$

19. $5 \sin x + 4 \cos x = 3 \Rightarrow 4 \sin x - 5 \cos x =$

(a) 4 (b) $4\sqrt{2}$

(c) $3\sqrt{2}$ (d) $\sqrt{2}$

20. The expression $\frac{\tan A}{1-\cot A} + \frac{\cot A}{1-\tan A}$ can be written as

(a) $\sin A \cos A + 1$ (b) $\sec A\ cosec\, A + 1$

(c) $\tan A + \cot A$ (d) $\sec A + cosec\, A$

Answer Key

1	C	11	B
2	B	12	D
3	B	13	D
4	C	14	D
5	B	15	B
6	D	16	A
7	A	17	D
8	D	18	A
9	C	19	B
10	B	20	B