

# DPP-1 ( **TRIGONOMETRY** )

USE THE CODE MLJSIRLIVE TO GET

## 10 % DISCOUNT

1. Which of the following relations is correct

- (a)  $\sin 1 < \sin 1^\circ$  (b)  $\sin 1 > \sin 1^\circ$   
(c)  $\sin 1 = \sin 1^\circ$  (d)  $\frac{\pi}{180} \sin 1 = \sin 1^\circ$

2. If  $\sin \theta + \operatorname{cosec} \theta = 2$ , the value of  $\sin^{10} \theta + \operatorname{cosec}^{10} \theta$  is

- (a) 10 (b)  $2^{10}$  (c)  $2^9$  (d) 2

3. If  $\sin \theta + \cos \theta = m$  and  $\sec \theta + \operatorname{cosec} \theta = n$ , the  $n(m+1)(m-1) =$

- (a) m (b) n (c) 2m (d) 2n

4. If  $\sin \theta + \cos \theta = 1$ , then  $\sin \theta \cos \theta =$

- (a) 0 (b) 1 (c) 2 (d)  $1/2$

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

- (a) -3 (b) -5 (c) -7 (d) -9

6. If  $\operatorname{cosec} A + \cot A = \frac{11}{2}$ , then  $\tan A =$

- (a)  $\frac{21}{22}$  (b)  $\frac{15}{16}$  (c)  $\frac{44}{117}$  (d)  $\frac{117}{43}$

7. If  $5 \tan \theta = 4$ , then  $\frac{5 \sin \theta - 3 \cos \theta}{5 \sin \theta + 2 \cos \theta} =$

- (a) 0 (b) 1 (c)  $1/6$  (d) 6

8. If  $\tan \theta = \frac{20}{21}$ ,  $\cos \theta$  will be

- (a)  $\pm \frac{20}{41}$  (b)  $\pm \frac{1}{21}$  (c)  $\pm \frac{21}{29}$  (d)  $\pm \frac{20}{21}$

9. If  $\sin x = \frac{-24}{25}$ , then the value of  $\tan x$  is

- (a)  $\frac{24}{25}$  (b)  $\frac{-24}{7}$  (c)  $\frac{25}{24}$  (d) None of these

10. If  $\tan \theta = \frac{-4}{3}$ , then  $\sin \theta =$

- (a)  $-4/5$  but not  $4/5$  (b)  $-4/5$  or  $4/5$   
(c)  $4/5$  but not  $-4/5$  (d) None of these

# DPP-1 ( **TRIGONOMETRY** )

USE THE CODE MLJSIRLIVE TO GET

10 % DISCOUNT

11. If  $\sin \theta = -\frac{1}{\sqrt{2}}$  and  $\tan \theta = 1$ , then  $\theta$  lies in which quadrant

- (a) First  
Fourth
- (b) Second
- (c) Third
- (d)

12. If  $\sin(\alpha - \beta) = \frac{1}{2}$  and  $\cos(\alpha + \beta) = \frac{1}{2}$ , where  $\alpha$  and  $\beta$  are positive acute angles, then

- (a)  $\alpha = 45^\circ, \beta = 15^\circ$
- (b)  $\alpha = 15^\circ, \beta = 45^\circ$
- (c)  $\alpha = 60^\circ, \beta = 15^\circ$
- (d) None of these

13. If  $\tan \theta = -\frac{1}{\sqrt{10}}$  and  $\theta$  lies in the fourth quadrant, then  $\cos \theta =$

- (a)  $1/\sqrt{11}$
- (b)  $-1/\sqrt{11}$
- (c)  $\sqrt{\frac{10}{11}}$
- (d)  $-\sqrt{\frac{10}{11}}$

14.  $\frac{\sin \theta}{1 - \cot \theta} + \frac{\cos \theta}{1 - \tan \theta} =$

- (a) 0
- (b) 1
- (c)  $\cos \theta - \sin \theta$
- (d)  $\cos \theta + \sin \theta$

15. If  $x = \sec \theta + \tan \theta$ , then  $x + \frac{1}{x} =$

- (a) 1
- (b)  $2 \sec \theta$
- (c) 2
- (d)  $2 \tan \theta$

16. If  $p = \frac{2 \sin \theta}{1 + \cos \theta + \sin \theta}$ , and  $q = \frac{\cos \theta}{1 + \sin \theta}$ , then

- (a)  $pq = 1$
- (b)  $\frac{q}{p} = 1$
- (c)  $q - p = 1$
- (d)  $q + p = 1$

17. If  $\tan \theta + \sin \theta = m$  and  $\tan \theta - \sin \theta = n$ , then

- (a)  $m^2 - n^2 = 4mn$
- (b)  $m^2 + n^2 = 4mn$
- (c)  $m^2 - n^2 = m^2 + n^2$
- (d)  $m^2 - n^2 = 4\sqrt{mn}$

18. If  $x = a \cos^3 \theta, y = b \sin^3 \theta$ , then

- (a)  $\left(\frac{a}{x}\right)^{2/3} + \left(\frac{b}{y}\right)^{2/3} = 1$
- (b)  $\left(\frac{b}{x}\right)^{2/3} + \left(\frac{a}{y}\right)^{2/3} = 1$
- (c)  $\left(\frac{x}{a}\right)^{2/3} + \left(\frac{y}{b}\right)^{2/3} = 1$
- (d)  $\left(\frac{x}{b}\right)^{2/3} + \left(\frac{y}{a}\right)^{2/3} = 1$

19. If  $\cot \theta + \tan \theta = m$  and  $\sec \theta - \cos \theta = n$ , then which of the following is correct

(a)  $m(mn^2)^{1/3} - n(nm^2)^{1/3} = 1$  (b)  $m(m^2n)^{1/3} - n(mn^2)^{1/3} = 1$

(c)  $n(mn^2)^{1/3} - m(nm^2)^{1/3} = 1$  (d)  $n(m^2n)^{1/3} - m(mn^2)^{1/3} = 1$

20.  $\sin^6 \theta + \cos^6 \theta + 3 \sin^2 \theta \cos^2 \theta =$

- (a) 0 (b) -1 (c) 1 (d) None of these

21. The value of  $2(\sin^6 \theta + \cos^6 \theta) - 3(\sin^4 \theta + \cos^4 \theta) + 1$  is

- (a) 2 (b) 0 (c) 4 (d) 6

22. If  $\sin x + \sin^2 x = 1$ , then the value of

$\cos^{12} x + 3 \cos^{10} x + 3 \cos^8 x + \cos^6 x - 2$  is equal to

- (a) 0 (b) 1 (c) -1 (d) 2

23. 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

24. If  $\tan \theta - \cot \theta = a$  and  $\sin \theta + \cos \theta = b$ , then  $(b^2 - 1)^2 (a^2 + 4)$  is equal to

- (a) 2 (b) -4 (c)  $\pm 4$  (d) 4

25.  $\cos 1^\circ \cdot \cos 2^\circ \cdot \cos 3^\circ \dots \cos 179^\circ =$

- (a) 0 (b) 1 (c) 2 (d)  $\frac{1}{2}$

1b 2d 3c 4a 5c 6c 7c 8c 9b 10b 11c 12a 13c 14d 15b 16d 17d 18c 19a 20c 21b 22c 23d 24c 25c