

G.C.E. (Advanced Level)

Trigonometry

(Pure Maths-I)

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பின்வருவனவற்றை 'நிறுவுக.

01. $\frac{\cos 2\alpha}{\sec \alpha} - \frac{\sin 2\alpha}{\csc \alpha} = \cos 3\alpha$ ✓

02. $\frac{\tan(\alpha - \beta) + \tan \beta}{1 - \tan(\alpha - \beta)\tan \beta} = \tan \alpha$ ✓

03. $\frac{\cot(\alpha - \beta) \cot \alpha + 1}{\cot \alpha - \cot(\alpha - \beta)} = \tan \beta$ - Co E B ✓

04. $\cot \theta - \cot 2\theta = \csc 2\theta$ ✓

05. $1 + \tan 2\theta \tan \theta = \sec 2\theta$ ✓

06. $\sin(A+B)\sin(A-B) = \cos^2 A - \sin^2 B$ ✓

07. $\cos(A+B)\cos(A-B) = \cos^2 A - \sin^2 B$ ✓

08. $\cos(A+B) + \cos(A-B) = 2\cos A \cos B$ ✓

09. $\cos(A-B) - \cos(A+B) = 2\sin A \sin B$ ✓

10. $\sin(A+B) + \sin(A-B) = 2\sin A \cos B$ ✓

11. $\sin(A+B) - \sin(A-B) = 2\cos A \sin B$ ✓

12. $\cos \alpha \cos(\gamma - \alpha) - \sin \alpha \sin(\gamma - \alpha) = \cos \gamma$ ✓

13. $\cos(\alpha + \beta) \cos \gamma - \cos(\beta + \gamma) \cos \alpha = \sin \beta \sin(\gamma - \alpha)$

14. $\sin\left[\frac{\pi}{4} + A\right] + \sin\left[\frac{\pi}{4} - A\right] = \sqrt{2}\cos A$ ✓

15. $\frac{\sin(A+B)}{\sin A \cos B} = \frac{\tan A + \tan B}{1 + \tan A \tan B}$ ✓

16. $(\sin A + \cos A)(\sin B + \cos B) = \sin(A+B) + \cos(A-B)$ ✓

17. $\cot(A+B) = \frac{\cot A \cot B - 1}{\cot A + \cot B}$ ✓

18. $\cos(45 - A)\cos(45 - B)\sin(45 - A)\sin(45 - B) = \sin(A+B)$ ✓

19. $\sin(45 + A)\cos(45 - B) + \cos(45 + A)\sin(45 - B) = \cos(A-B)$ ✓

20. $\frac{\sin(A-B)}{\cos A \cos B} + \frac{\sin(B-C)}{\cos B \cos C} + \frac{\sin(C-A)}{\cos C \cos A} = 0$ ✓

$$- 21. 2 \sin(\pi/4 + \alpha) \cos(\pi/4 + \beta) = \cos(\alpha + \beta) + \sin(\alpha - \beta) \checkmark$$

$$- 22. 2 \sin(\pi/4 + \alpha) \cos(\pi/4 + \alpha) = \cos^2 \alpha - \sin^2 \alpha \checkmark$$

$$H.O \quad 23. \frac{\sin(\beta - \gamma)}{\sin \beta \sin \gamma} + \frac{\sin(\gamma - \alpha)}{\sin \gamma \sin \alpha} + \frac{\sin(\alpha - \beta)}{\sin \alpha \sin \beta} = 0 \checkmark$$

$$24. \frac{\sin 2\theta}{\sin \theta} - \frac{\cos 2\theta}{\cos \theta} = \sec \theta \checkmark$$

$$25. \frac{\sin 2\theta}{\cos \theta} - \frac{\cos 2\theta}{\sin \theta} = \operatorname{cosec} \theta$$

$$26. \cos A - \tan B \sin A = \cos(A + B) \sec B \checkmark$$

$$27. \cos A + \cot B \sin A = \sin(A + B) \operatorname{cosec} B \checkmark$$

$$28. \tan(\theta + \pi/4) + \tan(\theta - \pi/4) = \frac{4 \tan \theta}{1 - \tan^2 \theta} \checkmark$$

$$29. \frac{\tan 4\theta - \tan 2\theta}{1 + \tan 4\theta \tan 2\theta} = \frac{2 \tan \theta}{1 - \tan^2 \theta} \checkmark$$

$$30. \frac{\tan 3\theta + \tan \theta}{1 - \tan 3\theta \tan \theta} = \frac{2 \tan 2\theta}{1 - \tan^2 2\theta} \checkmark$$

$$31. \tan(x + y) - \tan x = \frac{\sin y}{\cos x \cos(x + y)} \checkmark$$

$$- 32. \cos x + \sin y \sin(x - y) = \cos y \cos(x - y) \checkmark$$

$$- 33. \sin \alpha \sin(\beta - \gamma) + \sin \beta \sin(\gamma - \alpha) + \sin \gamma \sin(\alpha - \beta) = 0 \checkmark$$

$$34. \tan(A + B + C) = \frac{\tan A + \tan B + \tan C - \tan A \tan B \tan C}{1 - \tan A \tan B - \tan B \tan C - \tan C \tan A} \checkmark$$

$$- 35. \frac{\sec 8A - 1}{\sec 4A - 1} = \frac{\tan 8A}{\tan 2A}$$

$$- 36. \frac{1 + \tan^2(45 - A)}{1 - \tan^2(45 - A)} = \operatorname{cosec} 2A$$

$$- 37. \tan(\pi/4 + \theta) - \tan(\pi/4 - \theta) = 2 \tan 2\theta \checkmark$$

$$- 38. \cos 4A = 8 \cos^4 A - 8 \cos^2 A + 1$$

$$39. \tan \theta = \frac{2}{\cot^3 \theta/2 - \tan \theta/2} \checkmark$$

$$- 40. \frac{1 - \tan^2 \theta}{1 + \tan^2 \theta} = \cos 2\theta \checkmark$$

$$- 41. 8 \cos^4 \theta = 3 + 4 \cos 2\theta + \cos 4\theta$$

$$- 42. \frac{\cos 3\theta}{\sin \theta} - \frac{\sin 3\theta}{\cos \theta} = 2 \cot 2\theta \cos 2\theta - 2 \sin 2\theta$$

$$- 43. \frac{\sin A + \sin 2A}{1 + \cos A + \cos 2A} = \tan A \checkmark$$

31-34 ans