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ST. LAWRENCE HIGH SCHOOL



A Christian Jesuit minority Institution

Subject: Mathematics

Class: X

Date:15.04.2020

Worksheet-8

Chapter- Trigonometric ratios of complementary angles

Topic - Trigonometric ratios of complementary angles

1. **Choose the correct alternative.** **1x15=15**
- a) Measure of $\text{Cosec}(90^\circ - \theta)$ is i) $\sin \theta$ ii) $\sec \theta$ iii) $\cot \theta$ iv) none of these
- b) $\frac{\cos 53^\circ}{\sin 37^\circ} = \underline{\hspace{2cm}}$ i) 1 ii) 0 iii) 2 iv) none of these
- c) $\sin^2 21^\circ + \sin^2 69^\circ = \underline{\hspace{2cm}}$ i) 0 ii) 2 iii) 1 iv) none of these
- d) If $\tan 2A = \cot (A - 18^\circ)$ where $2A$ is a positive acute angle, then measure of A is
i) 36° ii) 72° iii) 90° iv) none of these
- e) $\cos 55^\circ \cos 35^\circ - \sin 55^\circ \sin 35^\circ = \underline{\hspace{2cm}}$ i) 1 ii) 0 iii) 2 iv) none of these
- f) If A and B are 2 complementary angles $(\sin A + \sin B)^2 = \underline{\hspace{2cm}}$
i) $1 + \sin A \sin B$ ii) $1 + \sin A \cos B$ iii) $1 + 2 \sin A \sin B$ iv) none of these
- g) $\cos^2 75^\circ - \sin^2 15^\circ = \underline{\hspace{2cm}}$ i) 0 ii) 1 iii) 2 iv) none of these
- h) $\sec^2 12^\circ - \frac{1}{\tan^2 78^\circ} = \underline{\hspace{2cm}}$ i) 0 ii) 3 iii) 1 iv) none of these
- i) $\cot 12^\circ \cot 38^\circ \cot 52^\circ \cot 78^\circ \cot 60^\circ = \underline{\hspace{2cm}}$ i) $\sqrt{3}$ ii) $1/\sqrt{3}$ iii) $2/\sqrt{3}$ iv) none of these
- j) $\left(\frac{\tan 35^\circ}{\cot 55^\circ} + \frac{\cot 78^\circ}{\tan 12^\circ} \right) = \underline{\hspace{2cm}}$ i) 2 ii) 1 iii) 4 iv) none of these
- k) ABC is a triangle. $\sin\left(\frac{B+C}{2}\right) = \underline{\hspace{2cm}}$ i) $\sin A/2$ ii) $\cos A/2$ iii) $\cos \frac{B+C}{2}$ iv) none of these

l) If $A+B=90^\circ$ and $\tan A=3/4$, then value of $\cot B$ is i) $3/5$ ii) $4/3$ iii) $3/4$ iv) none of these

m) $\{\cos(40^\circ + \theta) - \sin(50^\circ - \theta)\} =$ _____ i) 0 ii) $7 \sin \theta$ iii) $2 \cos \theta$ iv) none of these

n) If $\sin 10\theta = \cos 8\theta$ and 10θ is a positive acute angle then value of $\tan 9\theta$ is i) $\sqrt{3}$ ii) $1/\sqrt{3}$ iii) 1 iv) none of these

o) $(\tan 1^\circ \times \tan 2^\circ \times \tan 3^\circ \times \dots \times \tan 89^\circ) =$ _____ i) 0 ii) $\sqrt{3}$ iii) 1 iv) none of these

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