

MATH 1151 QUIZ-1 (10 minutes)

1.(5 points) Establish the identity $\frac{\cos(\alpha+\beta)}{\cos \alpha \cos \beta} = 1 - \tan \alpha \tan \beta$.

Solution: Since $\cos(\alpha + \beta) = \cos \alpha \cos \beta - \sin \alpha \sin \beta$, when we replace this on the left side we easily get $1 - \tan \alpha \tan \beta$. **Q.E.D.**

3.(5 points) Find the value of the number C: $\frac{1}{2}(\sin x)^2 + C = -\frac{1}{4} \cos 2x$.

Solution: Since $\cos 2x = 1 - 2(\sin x)^2$, when we replace that on the right side we see that it turns to $-\frac{1}{4} + \frac{1}{2}(\sin x)^2$. When we compare this with the original equation's left side we see that $C = -\frac{1}{4}$. **Q.E.D.**