

Name: _____

GTID: _____

Answer the questions in the spaces provided and put your answer in the BOX. Organize work clearly and simplify answers for full credit.

1a. Find the exact value: $\cos\left(\frac{\pi}{3} - \frac{\pi}{4}\right)$

1b. Given that $\tan u = \frac{3}{4}$, with u in quadrant III, and $\sin v = \frac{5}{13}$, with v in quadrant II, find the exact value of $\cos(u + v)$.

1c. Find the exact value: $1 - 2 \sin^2 75^\circ$

2. Use power-reducing formulas to rewrite the expression so that it does not contain trigonometric functions of power greater than 1.

$$\sin^2 x \cos^2 x$$

3. Verify the identity.

$$(\cos x - \sin x)(\cos x + \sin x) = 1 - 2 \sin^2 x$$