PRE-CALCULUS · HOMEWORK · SPECIAL ED

Use Pythagorean Identities

SCORE / 25

01 Part A · Practice

$\sin^2\theta + \cos^2\theta = 1$, $1 + \tan^2\theta = \sec^2\theta$, $1 + \cot^2\theta = \csc^2\theta$. After a square root, the quadrant gives the sign.

1 ●○○

Simplify with a Pythagorean identity:

$1 - \cos^2\theta$

HINT Recall $\sin^2 + \cos^2 = 1$, $1 + \tan^2 = \sec^2$, $1 + \cot^2 = \csc^2$.

2 ●○○

$\tan\beta = \frac{12}{5}$ with β in Quadrant I. Find $\sec\beta$.

HINT Use $\sec^2\beta = 1 + \tan^2\beta$, take the square root, then choose the sign for the quadrant.

3 ●○○

$\cot\beta = \frac{12}{5}$ with β in Quadrant I. Find $\csc\beta$.

HINT Use $\csc^2\beta = 1 + \cot^2\beta$, take the square root, then choose the sign for the quadrant.

4 ●○○

$\sin\alpha = \frac{12}{13}$ with α in Quadrant I. Find $\cos\alpha$.

HINT Use $\cos^2\alpha = 1 - \sin^2\alpha$, take the square root, then choose the sign for the quadrant.

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Preview - the full worksheet and its answer key are at primeworksheet.com