Section 7.2
Solutions and Hints

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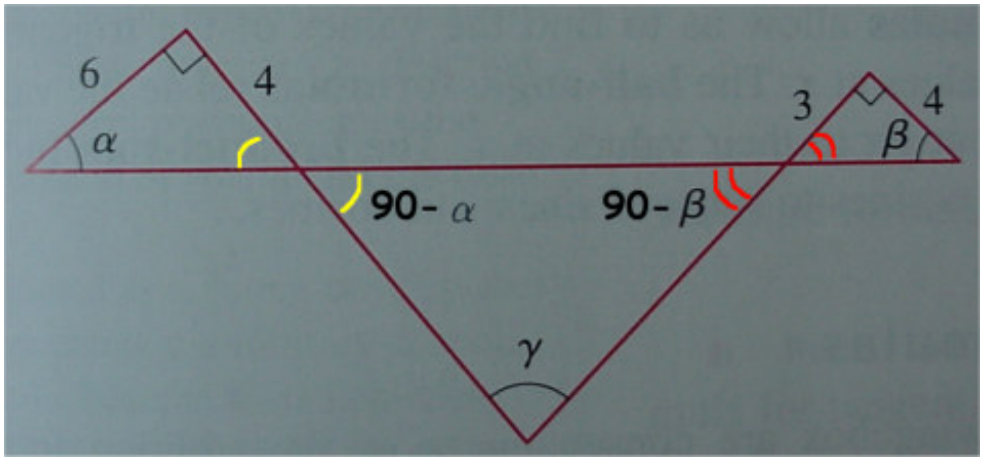
for the book:
Precalculus, Mathematics for Calculus 4th Edition
by James Stewart, Lothar Redlin and Saleem Watson.

47. Using the below figure show $\alpha + \beta = \gamma$, and find tan γ



Notice we have added the yellow and red angle markers in to demonstrate how to to derive $\alpha + \beta = \gamma$. Notice that because the angles of a triangle must sum to be 180° that the yellow angle must = $180° - (\alpha + 90°) = \alpha - 90$. Likewise the red angle must be = $180 - (\beta + 90) = 90 - \beta$.

Thus we see that $\gamma = 180 - ((90 - \alpha) + (90 - \beta)$
$= 180 - 180 + \alpha + \beta$
$= \alpha + \beta$