Sum & Difference "In Reverse"

ex. Evaluate $\sin(\underset{\alpha}{\frac{5\pi}{12}})\cos(\underset{\beta}{\frac{\pi}{12}}) - \cos(\underset{\alpha}{\frac{5\pi}{12}})\sin(\underset{\beta}{\frac{\pi}{12}})$

Look at the formula given and see which of the six formulas is being used.

$\sin(\alpha - \beta)$

$= \sin\left(\frac{5\pi}{12} - \frac{\pi}{12}\right)$

Plug α and B into the left side of the formula.

$= \sin\left(\frac{4\pi}{12}\right)$

Add or subtract the fraction.

$= \sin\left(\frac{\pi}{3}\right)$

$= \frac{\sqrt{3}}{2}$

Find the exact value from the unit circle.

ex. Evaluate $\cos(\underset{\alpha}{\frac{\pi}{9}})\cos(\underset{\beta}{\frac{2\pi}{9}}) - \sin(\underset{\alpha}{\frac{\pi}{9}})\sin(\underset{\beta}{\frac{2\pi}{9}})$

$\cos(\alpha + \beta)$

$\cos\left(\frac{\pi}{9} + \frac{2\pi}{9}\right)$

$\cos\left(\frac{3\pi}{9}\right)$

$\cos\left(\frac{\pi}{3}\right)$

$\frac{1}{2}$