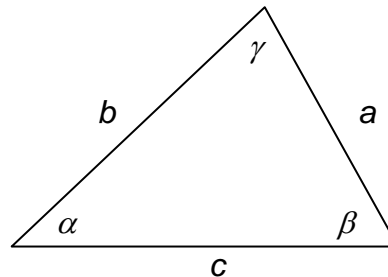


Provide both a clear and organized presentation. Show all of your work and completely simplify your answers.

Consider the following triangle:



1. Explain, geometrically, why  $b\cos\gamma + c\cos\beta = a$ , and  $c\cos\alpha + a\cos\gamma = b$ , and  $a\cos\beta + b\cos\alpha = c$
2. Using Gauss-Jordan Elimination on an augmented matrix, inverse matrices, or Cramer's Rule to solve the system of equations above for  $\cos\alpha$ ,  $\cos\beta$ , and  $\cos\gamma$
3. What have you just derived?