

Proof of a Conditional Identity

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In this article, we have proven a trigonometric identity when three angles are connected by a given relation. If the sum of three angles (A , B , and C) is π (or if A , B , and C are the angles of a triangle), many identities have been found to hold between their trigonometric ratios of their multiple or submultiple angles. The purpose of this article is to prove a new identity between cosines when $A + B + C = \pi$.

Keywords: trigonometry, sum-to-product formula, conditional identities, triple sum product identity



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