
Proof Without Words

Integral of Sine Squared

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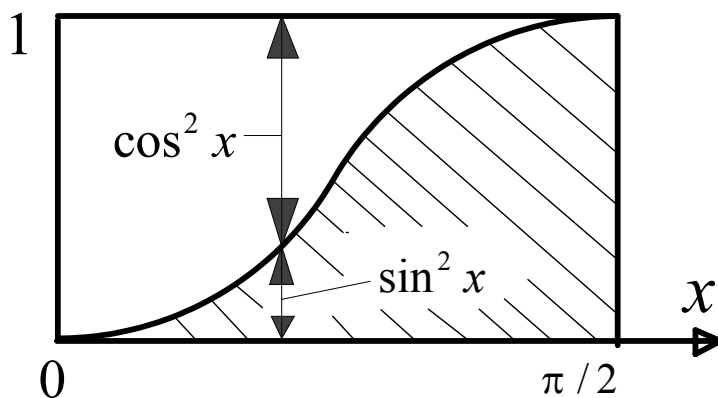


Tom Osler is professor of mathematics at Rowan University. He received his PhD from the Courant Institute at New York University and is the author of 49 mathematical papers. In addition to teaching university mathematics for the past 41 years, Tom has a passion for long distance running. He has been competing for the past 48 consecutive years. Included in his over 1700 races are wins in three national championships in the late sixties at distances from 25 kilometers to 50 miles. He is the author of two running books.

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$$\sin^2 x + \cos^2 x = 1$$

$$\sin x = \cos\left(\frac{\pi}{2} - x\right)$$



$$\int_0^{\pi/2} \sin^2 x \, dx = \int_0^{\pi/2} \cos^2 x \, dx = \text{Area of Rectangle} / 2 = \pi / 4$$

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