those exceeding n are in equal last position, with deficit equal to n, nonetheless every single prime will lead the field an unlimited number of times!

I am grateful to the referee for remarks that shortened and improved this Note, and also for the above result on the digit-sum of n in base p.

Reference

1. John R. Silvester, Factorial factors, *Math. Gaz.* **88** (March 2004), pp. 119-123.

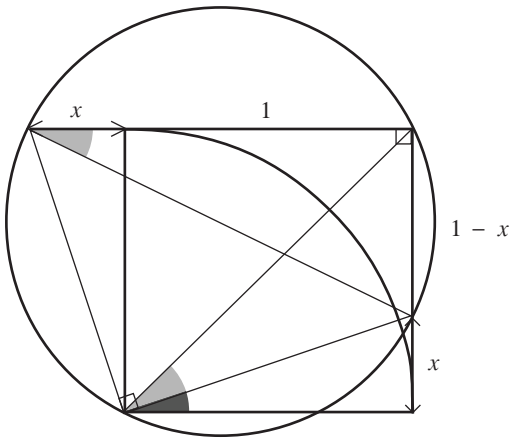
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105.22 Proof without words



$$\tan^{-1}(x) + \tan^{-1}\left(\frac{1-x}{1+x}\right) = \frac{\pi}{4}, \qquad (0 < x < 1).$$

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105.23 Visual proofs of $x^3 + y^3 = (x + y)(x^2 - xy + y^2)$ and $x^3 - y^3 = (x - y)(x^2 + xy + y^2)$

Claim: In this Note, I visually establish two elementary algebraic identities

$$x^3 + y^3 = (x + y)(x^2 - xy + y^2) \tag{1}$$

and

$$x^3 - y^3 = (x - y)(x^2 + xy + y^2). \tag{2}$$

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