

Copy of a letter from Newton to Michael Dary, dated 22 January 1675/6

Author: Isaac Newton

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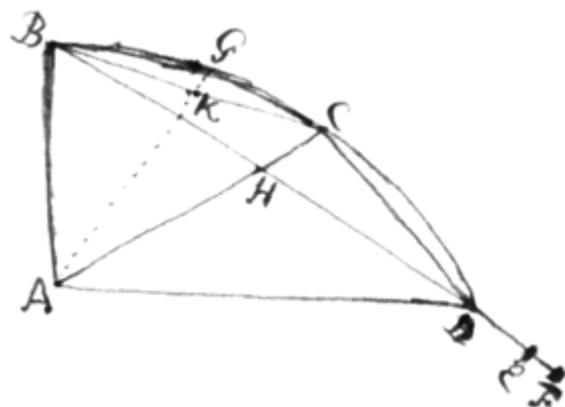
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Jan: 22: 1675

M^r Dary

With my thanks for your problem, I should have sent you a Continuation of the two series you desire but I have not any Computations of them by mee, & perceive them so tedious to Compute that I am constrained to deferr them to another tyme: The series for the length of the Ellipsis I Computed when I sent it you, & sent you so much as I Computed of it. But at present in stead of these I have sent you an approximation for the length of the Ellipsis which you may send Sir Anthony Dean instead of that you propounded, if you please.

Suppose AB, AD, rectangular Conjugate semidiameters of the Ellipsis, BCD a quadrant of it, AD its chord bisected in H; Draw AH abutting upon the Ellipsis at C, Joyne BC and CD, Take BE = BC + CD, & EF = $\frac{1}{3}$ DE: and BF shall be the length of the quadrant quamproximè: This is derived from Hugeniu's Quadrature of the Circle, and I believe approaches the Ellipsis as near as his doth the Circle.



In like maner if you would know the length of any other arch; as BGC, bisect its Chord in K, Draw AKG, and the Chords BG & GC: and make $\frac{4BG+4GC-BC}{3}$ the length of the arch BGC.

Thus you may find BC and CD severally and the summe of them will give the Quadrant BCD, exacter then before.

Your Loving friend

I: Newton

D^r Barrow's Euclid I make no question but is safe enough now I know it was delivered.

<42av>

Approach for the Perimeter of an Ellipsis

