

QUADRISECANTS GIVE NEW LOWER BOUNDS  
FOR THE ROPELENGTH OF A KNOT

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**Abstract**

Using the existence of a quadrisecant line, we show the ropelength of any nontrivial knot is at least 15.66. This improves the previously known lower bound of 12. Numerical experiments have found a trefoil with ropelength less than 16.34, so our new bounds are quite sharp.