

but NH is the side of a square within the circle NH , whose radius is CG , the chord of three-fourths of the quadrant of the circle, $ACBD$: consequently, the square inscribed in the circle NH , is equal to the circumference $ACBD$.

I undertook the investigation which led to the above discovery, (if I be allowed the expression till confuted,) in consequence of the following note, which appeared in the Bos. Rec. and Tel. Nov. 3d, 1826. "M. Malacare, an Italian geometrician, pretends to have strictly resolved the famous problem of the quadrature of the circle. His proposition is this: 'the circumference of a circle is composed of three sides of a square to the circle *plus* the semi-diameter.' He offers a reward of three hundred francs to the first person who shall before the first of November next, convict him of an error." As M. M's proposition was to me unsatisfactory, I wished to convict him, (though I should never receive the reward) at least of inaccuracy: so by supposing the diameter of a circle to be 300 feet, the circumference according to M. M's theory, would be 936.4, if I understand him correctly; but by the common method, it would be 942.4; hence I found, that, by all the calculations I could make, M. M's method could not come nearer the truth, than 6 feet from the common plan. M. M. therefore is wrong; he has only guessed at the truth, and may transmit his 300 francs when convenient; because, though the common method is not *correct*, it is well known to be much nearer the truth, than any other plan can be, which differs 6 feet from it, in a circle of 300 feet diameter. Thus the common method is a sufficient test for all plans which differ from it materially: but I am now about to disown its authority; because, it is known to be a little incorrect, and the plan I here propose differs only a little from it; and I am inclined to believe, it is *all* that little nearer the truth. I have

tried it by various calculations and find it would make the circumference of the above-mentioned circle 942.8 feet.

In the investigation, I observed the following truths, which may be matter of speculation to the curious inquirer, and assist him in his calculation or demonstration:—

If the arch ACB , be divided into any number of parts; straight lines from each division to D , will divide ASB into the same number of similar parts. Join GO , and the triangle COG , is equiangular and similar to the triangle ADR . Lastly, for the present, about the same centre with the distance NH , describe another circle YV : produce the diameters and join them: YV is the side of a square without NH , and within YV ; and take YV for radius, the same thing will occur. These things sir, I submit to your consideration.

W. M.K.

The above, Mr. Editor, is the amount of several papers handed to me for a demonstration, before sending them to the public prints. The calculations I think are correct. I have applied demonstration perhaps as far as it can go, and though at first they were bare assertions, I find now they are as clear as any proposition in Euclid, excepting in one point, where both calculation and demonstration fail. Viz. where it is said AR or NH , will be equal to CFB . You may say, this is the principle point, and if we fail here, all that we have done must go for nothing.

The remark has every appearance of truth, yet I cannot agree with it; for the reasons I am now going to mention. There is no other criterion, by which this proposition can be proved true or false, than actual measurement. If there were any just standard to be obtained; i. e. if the true circumference of any circle could be found either by calculation or demonstration; the point would be settled; there would be nothing to discover. Suppose for a moment, the common method of calculation to