The Ultimate Mathematical Face-Off:

Investigating Tau (τ) vs Pi (π)

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Abstract

Currently, we use $\pi$ in all kinds of mathematics, whether we use it in basic Euclidean Geometry, or in advanced calculus. Recently, there seems to be a movement to replace the common symbol $\pi$ with a new symbol $\tau$. Simply put, the argument is that $\tau$ will make mathematics dealing with $\pi$ easier to understand. The main points of the argument surround $\pi$’s use in geometric shapes, in trigonometric functions, and also in radian measurement. Advanced mathematics has their part in the debates, however, I chose to focus on geometry, trigonometry, the unit circle, and radian measures. In the contents of this paper, I set out to find the pros and cons of replacing $\pi$ with $\tau$. I used various common equations that are taught with circles and put them in terms of $\tau$ rather than using the common term $\pi$. I have come to find out that in some equations, it is simpler to keep $\pi$, but replacing it with $\tau$ may give us more information than its original form.