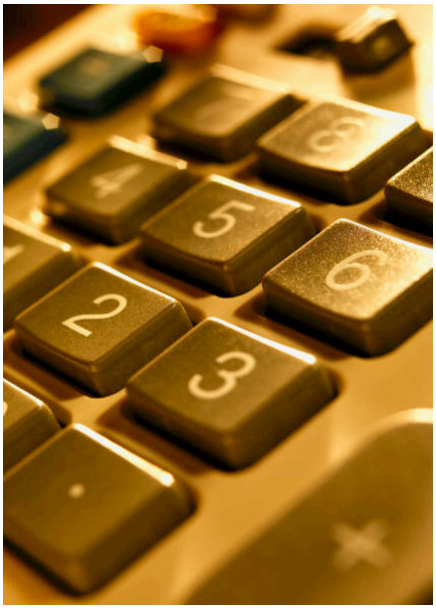
Temple Math Club

Weekly Meeting

Dr. Jeromy Sivek, Department of Mathematics at Temple University, presents…

Title: Pi is not constant (unless we live in a universe with anisotropic physics)

Abstract: Given any circle, the ratio of the circumference to the diameter of this circle is pi. Pi is considered a universal constant. In Euclidean geometry, the location and size of the circle will not affect the ratio, c/d, which gives us pi.



However, geometric properties depend on the way we measure distance. If we use a different (topologically equivalent) metric to find c and d, we get different values for pi. We'll see some examples. We will note that as we change our method of measuring distances and we define a circle to be the set of all points, which is some radial distance from its center, then we get differently shaped circles. And, incredibly, if we use a metric that's consistent with the ideas of relativistic physics, we find that pi changes with the scale of the circle under consideration.

Please join us this Friday, October 21 @ 4PM-5PM. This meeting, particularly, is in Wachman 1036. There will be free food.