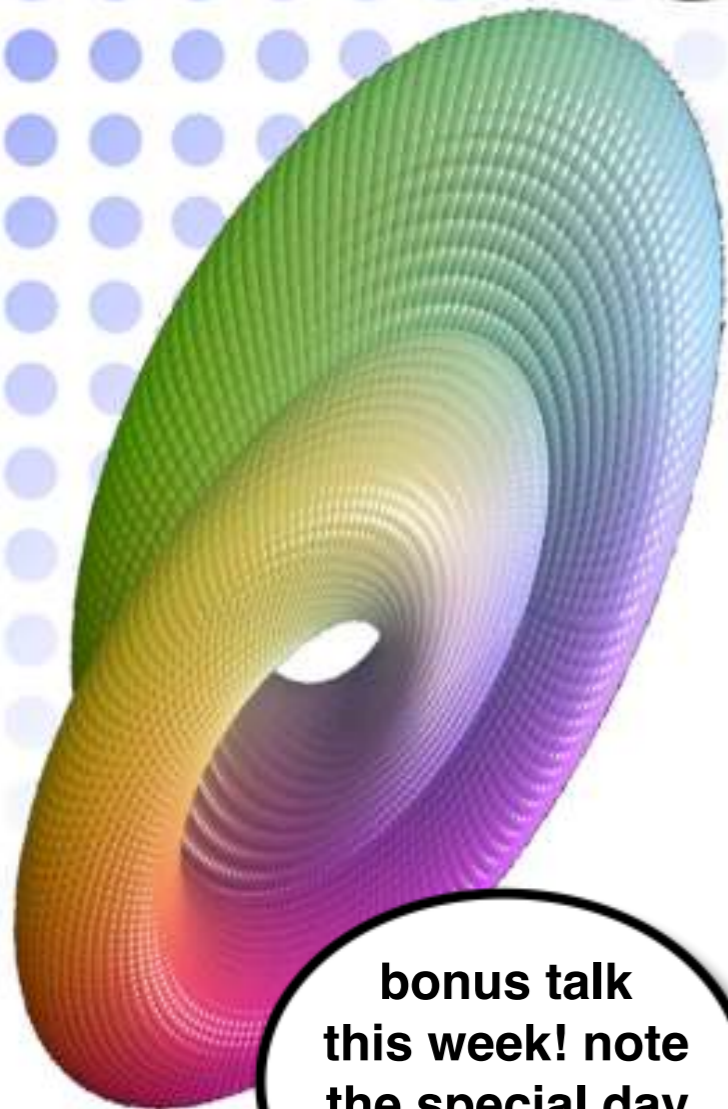


# Michigan Math Club

Friday at 4pm in room 1360

Free Pizza and Pop



**bonus talk  
this week! note  
the special day  
and location**



## *Wilson-like theorems*

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Abstract for 26 October 2018

John Wilson (1741–1793) was an undergraduate at Cambridge when he made the observation that if  $p$  is prime, then  $1 + (p - 1)!$  is divisible by  $p$ . His advisor, Edward Waring, included this observation in his volume on number theory, *Meditationes Algebraicae*, attributing it to his student. The result, which was later proved by Lagrange, became known as Wilson's Theorem. The result may be interpreted as saying that the product of all nonzero elements of the finite field  $\mathbb{F}_p$  is  $-1$ . In this talk, we will introduce the finite field  $\mathbb{F}_p$ , and then we will discuss the proof of Wilson's Theorem. Finally, we will present new theorems about easily-described subsets of  $\mathbb{F}_p$  with easily-described products.