On the Infinitude of Primes

The great theorem of this chapter is, essentially, that there are infinitely many primes. In our readings, we'll see Euclid's proof of this fact as well as another proof by a mathematician named Hillel Furstenberg. Furstenberg is probably most famous for his contributions to an area of mathematics called "ergodic theory", in which we study moving systems.

Readings

First reading: Dunham, Chapter 3, pages 73-83

Second reading: On Furstenburg's Proof of the Infinitude of Primes

Questions

Question 1 *What is the example given of an arithmetic progression?* $2 + \underset{\text{given}}{\boxed{7}}\,\mathbb{Z}$

Question 2 *To which branch of mathematics is Furstenberg's proof method most related? In other words, what makes his approach different from Euclid's?*

Multiple Choice:

(a) *Number Theory*

(b) *Calculus*

(c) *Topology* ✓

(d) *Ergodic Theory*

Question 3 *What are the most important points from this reading?*

Learning outcomes:

Author(s):

See On Furstenburg's Proof of the Infinitude of Primes at http://www.jstor.org.proxy.lib.ohio-state.edu/stable/40391095

Free Response: