MATH 150

Today

1. WeBWorK
2. 1.4: Continuity
3. Homefun

Goals:

1. Continuity (Understand the definition of continuity and how to determine where functions are continuous)

Where is today's material used?

1. Continuity is a principle we take for granted in our daily lives: time advances without jumping, we can't teleport, etc.

Chapter 1: Limits and Continuity

1. Definition of continuity ($\lim_{x \to c} f(x) = f(c)$, one-sided)
2. Families of continuous functions (constant, linear, power (on their domains))
3. Types of discontinuities (point/removeable, jump, infinite)
4. Extreme Value Theorem (A continuous function on a closed, bounded interval is guaranteed to have a max and a min on that interval)
5. Intermediate Value Theorem (If f is continuous on $[a, b]$, then f attains every value between $f(a)$ and $f(b)$ somewhere on (a, b).
6. **Theorem:** a function can change sign only at a root or a discontinuity
7. Bisection method (repeated application of the IVT)

8. Examples. p. 135: 23, 24-26, 27, 28, 29, 30, 33, 34-37, 38, 40, 43, 49-54, 55, 56, 57, 58

Next Time

1. Watch Section 1.5 [13 min]