1 | Reading

1.1 | Openstax

Link

- #define continuity at a point
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$$\lim_{x\to a} f(x) = f(a)$$
  - To ensure that it is defined, connected on both sides, and doesn't have a random point
  - To check for continuity, just check for $f(a)$, $\lim_{x\to a} f(x)$, and that they are equal
- Rational functions
  - Are continuous on their domains
    - Basically anywhere they are defined
- Discontinuity types
  - Removable discontinuities
    - Hole in the graph
  - infinite is continuity
    - asymtote
  - jump discontinuity
- Continuity from the right and left
  - Same as definition of continuous, but replace the limit with right and left hand limits respectively

1.2 | libretexts

Link - Basically the same thing - Properties of continuous functions (group like bits) - > Let □ and □ be continuous functions on an interval □ , let □ be a real number and let □ be a positive integer. The following functions are continuous on □ . > - Sums/Differences : □±□ > - Constant Multiples : □□□ > - Products : □□□ > - Quotients : □/□ (as long as □≠0 on □) > - Powers : □□ > - Roots : $f(x) = \sqrt[n]{x}$ (if □ is even then □≥0 on □ ; if □ is odd, then true for all values of □ on □ .) > - Compositions : Adjust the definitions of □ and □ to: Let □ be continuous on □, where the range of □ on □ is □ , and let □ be continuous on □. Then □□□, i.e., □(□(□)), is continuous on □. -

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