Week 9

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| More Graphing | Graph      )        Critical Points    when    when  Note that the domain of (and of & too) is all of   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | x |  |  |  | 0 |  |  |  | |  | + | + | + | 0 | - | - | - | |  | + | 0 | - |  | - | 0 | + | | y | inc | inc | inc | Abs Max | dec | dec | dec |   What does being + or –tell you about y? ( The change of the slope)  +: concave up  - : concave down  Horizontal Asymptotes      Vertical Asymptotes?  is defined & exists for all x so it can’t have vertical asymptotes  Intercepts  y-intercept:  x-intercept: None  Draw the Graph:    Points of Inflection:  & |

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| Integration  Anti-derivatives & Integrals | Two Problems:   * Given what is? * Given, what is the area between the graph and the x-axis for ? |
|  | Some anti-derivatives  Exponential Rule for anti-derivates      When  cause    c Could be any constant, so anti-derivatives are not unique.  When    so  General Fact: If is an anti-derivative of then so is for any c.  Sum Rule for anti-derivatives  If are the anti-derivatives of respectively, then the anti-derivated of is .  Multiplication by constants rule for anti-derivaties  IF is an anti-derivates of and then is an anti-derivative of . |

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| Notation | We’ll denote the anti-derivative of by   1. if |