Week 9

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 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 downHorizontal Asymptotes  Vertical Asymptotes? is defined & exists for all x so it can’t have vertical asymptotesInterceptsy-intercept: x-intercept: NoneDraw the Graph:Points of Inflection: &  |

|  |  |
| --- | --- |
| IntegrationAnti-derivatives & Integrals | Two Problems:* Given what is?
* Given, what is the area between the graph and the x-axis for ?
 |
|  | Some anti-derivativesExponential 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-derivatiesIF is an anti-derivates of and then is an anti-derivative of . |

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

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