**Finding local Extrema and Increasing/Decreasing Intervals**

1. Compute
2. Find critical points, i.e.
 or does not exist
3. Create a table with and

**Example**: Find all relative extrema for

1. Critical points
2. Setting up the table:

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

 **Example**: Find all relative extrema for

1. Critical points
2. Setting up the table:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

**Finding Inflection Points and Concavity**

1. Compute
2. Find possible inflection points, i.e.
 or does not exist
3. Create a table with and

**Example**: Discuss the concavity of

1.
2. ossible inflection points
3. Setting up the table:

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |

**Example**: Discuss concavity for

1.
2. possible inflection points
3. Setting up the table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

**Curve Sketching**

**Example:** Sketch the graph of

1. Domain:
2. Asymptotes:
	1. v.a.
	2. h.a.
3.
4. Critical points:
Possible inflection points:
5. Setting up the table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

1. Find zeros
2. Find y-intercept
3. Evaluate f:

**Example:** Sketch the graph of

1. Domain:
2. Asymptotes:
	1. v.a.
	2. h.a.
3.
4. Critical points:
Possible inflection points:
5. Setting up the table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

1. Find zeros
2. Find y-intercept
3. Evaluate f: