

- 1.) Chain Rule (Reference: Exercises 9, 17, 33, 57, 63, 81, 83, 87 on pages 161–162.)
- 2.) Implicit differentiation and logarithmic differentiation. (Reference: Exercises 1, 5, 7, 11, 71 and 73 on pages 171–173.)
- 3.) Derivatives of inverse trigonometric functions. (Reference: Exercises 19, 21 and 39 on page 180.)
- 4.) Find extrema of a function on a closed interval. (Reference: Examples 2 and 3 on page 207–208.)
- 5.) Find the intervals on which a given function $f(x)$ is increasing/decreasing. Locate the relative maximum/minimum points of $f(x)$. (Reference: Examples 2 and 3, on pages 222–223; Exercises 5, 19, 21, 29, 35, 39, 45, on page 226.)
- 6.) Determine the intervals on which the graph of a given function $f(x)$ is concave upward/downward and find all inflection points for the graph of $f(x)$. (Reference: Examples 2, 3 on page 232–233; Exercises 11, 13, 19, 27 on page 235.)
- 7.) Limits at infinity and horizontal asymptotes. (Reference: Examples 1, 2, 3, 4, 7 on page 239–244; Exercises 21, 23, 25, 29, 35, 37, 41, 49 on page 245–246.)
- 8.) Set up and solve an optimization problem. (Reference: Examples from the Handout on Optimization.)
- 9.) Set up and solve a related rates problem. (Reference: Examples 2, 3, 4 on page 182–185.)