

5.3-Derivatives and the Shapes of Curves

Mean Value Theorem:

Recall 5.1: What f' and f'' say about f :

Second Derivative Test:

Examples:

Determine where the function $x^3 - 3x^2 + 4$ is increasing and decreasing, concave up, and concave down.

Find the horizontal and vertical asymptotes, intervals of direction, and intervals of concavity for $f(x) = \ln |1 - x^2|$ and sketch the graph.

On Your Own: #1, 5, 7, 9, 13, 17, 19, 21, 35, 43, 45