\[ F(x) = x^3 - 2x^2 + x \]

• Use the first derivative test to find any intervals of increase and/or decrease of the function above.

• Find any local extrema using the first or the second derivative test.

• Use the first derivative test to find any absolute extreme values on the interval \([-1, 2]\)

• Use the second derivative test to find any intervals of concavity and points of inflection
Optimization

• A Gardner wants to make a rectangular enclosure using a fence on one side and a 120 meters of fence on the other three sides. Find the dimensions and the area of the largest possible enclosure.