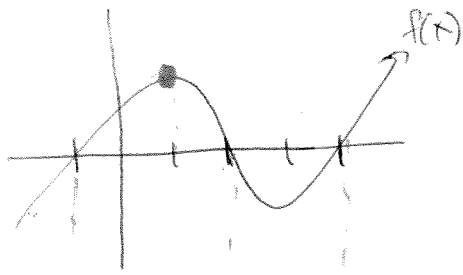


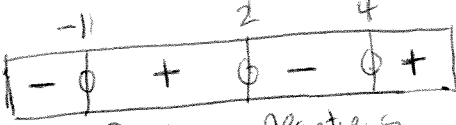
To Find Zeros of Function

Calc: 2

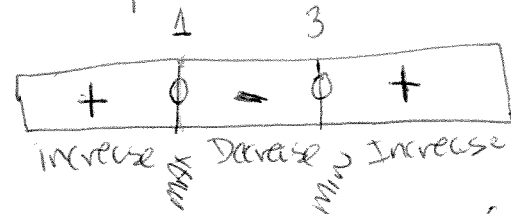
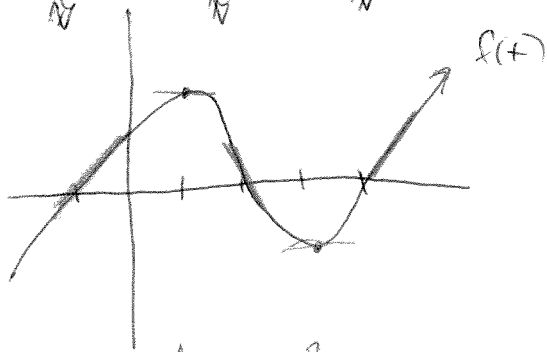
- or Newton's Method.
- or Solver.
- or Intersection meth
- or Poly Solver on TI 85
- or Wolfram Alpha



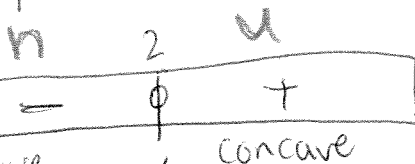
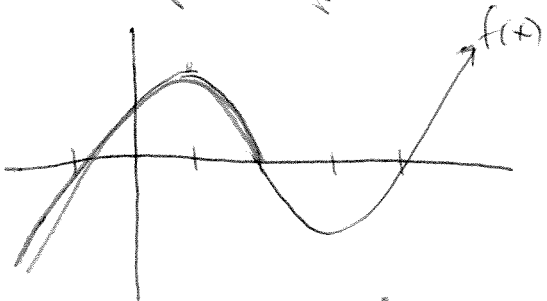
$f(x)$



zero Positive zero Negative zero



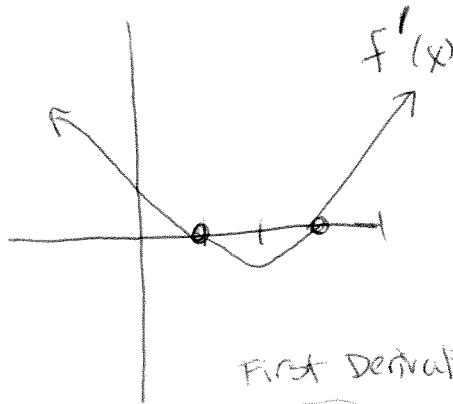
Increase MAX Decrease MIN Increase



concave down Inflection pt concave up

Ex $y = Ax^3 + Bx^2 + Cx + D$
 $y' = 3Ax^2 + 2Bx + C$
 $y'' = 6Ax + 2B = 0$

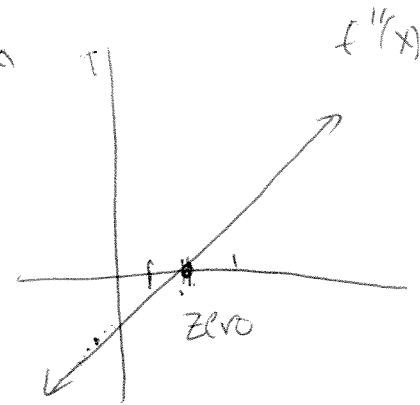
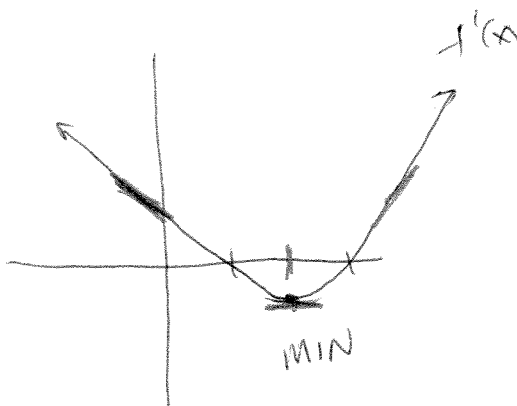
$6Ax = -2B$
 $x = -2B/6A$ or $-\frac{B}{3A}$



First Derivative Test

+ 0 -
MAX

- 0 +
MIN



Find

$y_1 = \text{reg edit}$
 $y_2 = \text{nder}(y_1)$
 $y_3 = \text{nder}(y_2)$
 or $y_1 = \text{reg edit}$
 $y_1 = \text{reg edit}$

Find Calc 3 or 4 Find max/min of y'

Then find zero same way.

To Find Max/Min Calc: 3 or 4

Find $y' = 0$. use methods above

(Critical Numbers.) when $y'' = 0$