3.8 Videos Guide

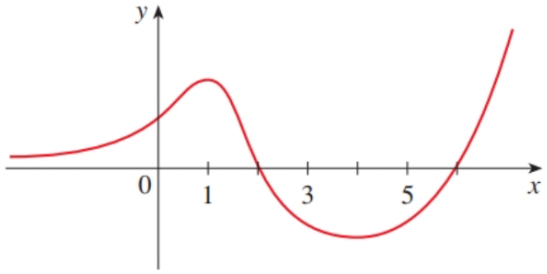
3.8a

- Newton's Method
  - Recursive formula: $x_n = x_{n-1} - \frac{f(x_{n-1})}{f'(x_{n-1})}$

Exercises:

3.8b

- For each initial approximation, determine graphically what happens if Newton's method is used for the function whose graph is shown.
  (a) $x_1 = 0$ (b) $x_1 = 1$ (c) $x_1 = 3$
  (d) $x_1 = 4$ (e) $x_1 = 5$



- Use Newton's Method to find an approximation to $\sqrt{2}$, accurate to six decimal places.

3.8c

- Use Newton's Method to find all solutions of the equation correct to six decimal places.
  $\sin x = x^2 - 2$