

2D1

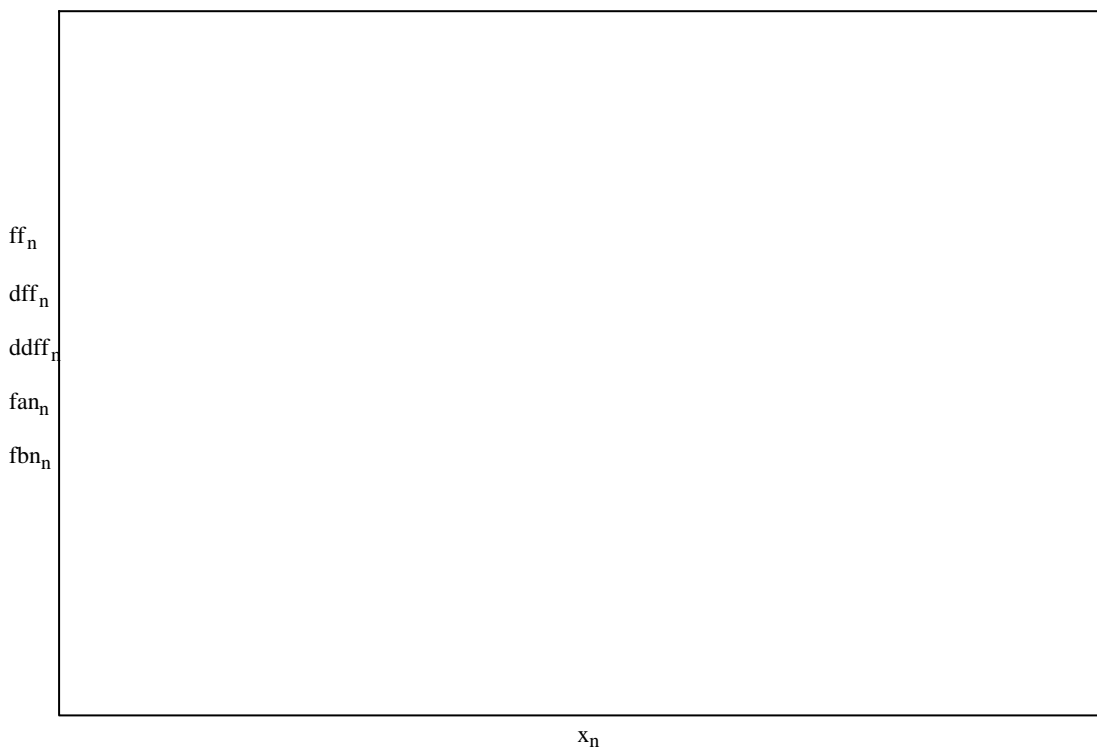
$$f(x) := \sqrt{x^2 + 2} - x$$

$$N := 2001 \quad n := 0..N \quad x_a := -15 \quad x_b := 15 \quad x_n := x_a + \frac{x_b - x_a}{N} \cdot n$$

$$f_n := f(x_n) \quad y_a := -10 \quad y_b := 10$$

$$df(x) := \frac{d}{dx}f(x) \quad dff_n := df(x_n) \quad ddf(x) := \frac{d^2}{dx^2}f(x) \quad dddf_n := ddf(x_n)$$

$$fa(x) := 0 \quad fan_n := fa(x_n) \quad fb(x) := -2x \quad fbn_n := fb(x_n)$$



$$s1 := 1 \quad t1 := \text{Maximize}(f, s1) \quad t1 = \quad f(t1) =$$

$$s2 := 6.1 \quad t2 := \text{Minimize}(f, s2) \quad t2 = \quad f(t2) =$$

$$\text{Given} \quad df(x) = 0 \quad \text{Find}(x) \rightarrow =$$

$$\text{Given} \quad ddf(x) = 0 \quad \text{Find}(x) \rightarrow =$$

$$\lim_{x \rightarrow \infty} \frac{f(x)}{x} \rightarrow \quad k := 0 \quad \lim_{x \rightarrow \infty} (f(x) - k \cdot x) \rightarrow$$

2D2

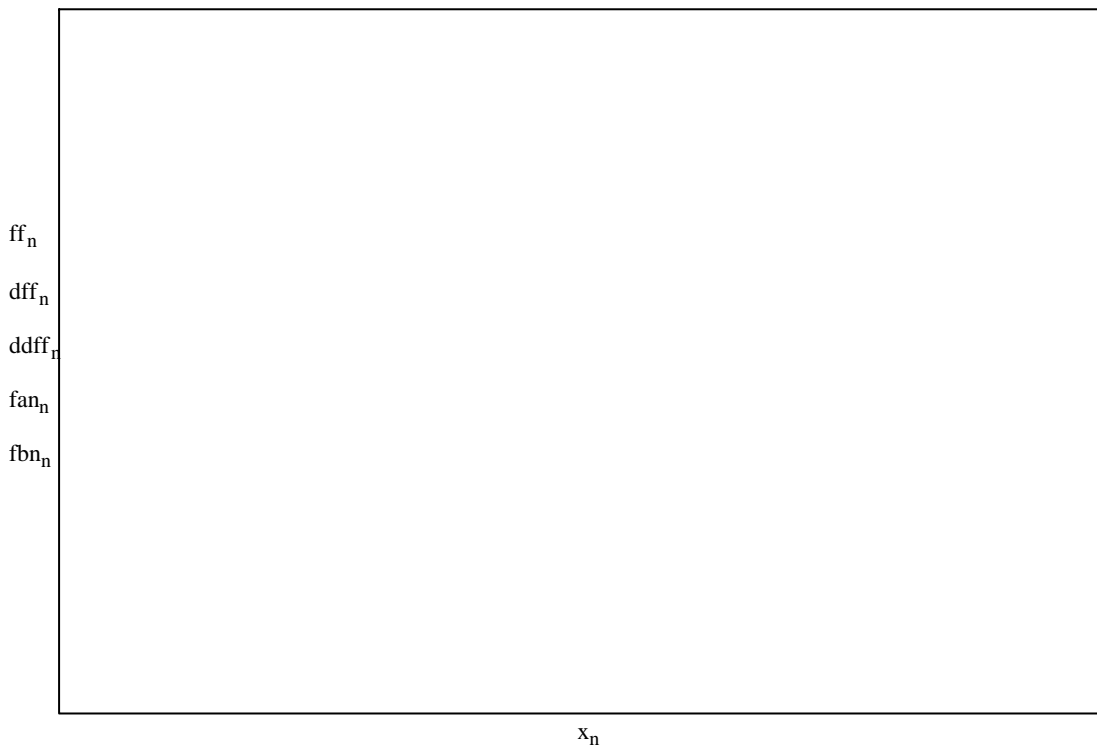
$$f(x) := \sqrt{x^2 + 2} + x$$

$$N := 2001 \quad n := 0..N \quad xa := -15 \quad xb := 15 \quad x_n := xa + \frac{xb - xa}{N} \cdot n$$

$$ff_n := f(x_n) \quad ya := -10 \quad yb := 10$$

$$df(x) := \frac{d}{dx}f(x) \quad dff_n := df(x_n) \quad ddf(x) := \frac{d^2}{dx^2}f(x) \quad dddf_n := ddf(x_n)$$

$$fa(x) := 0 \quad fan_n := fa(x_n) \quad fb(x) := 2x \quad fbn_n := fb(x_n)$$



$$s1 := 1 \quad t1 := \text{Maximize}(f, s1) \quad t1 = \quad f(t1) =$$

$$s2 := 6.1 \quad t2 := \text{Minimize}(f, s2) \quad t2 = \quad f(t2) =$$

$$\text{Given} \quad df(x) = 0 \quad \text{Find}(x) \rightarrow =$$

$$\text{Given} \quad ddf(x) = 0 \quad \text{Find}(x) \rightarrow =$$

$$\lim_{x \rightarrow \infty} \frac{f(x)}{x} \rightarrow \quad k := 0 \quad \lim_{x \rightarrow \infty} (f(x) - k \cdot x) \rightarrow$$

2D3

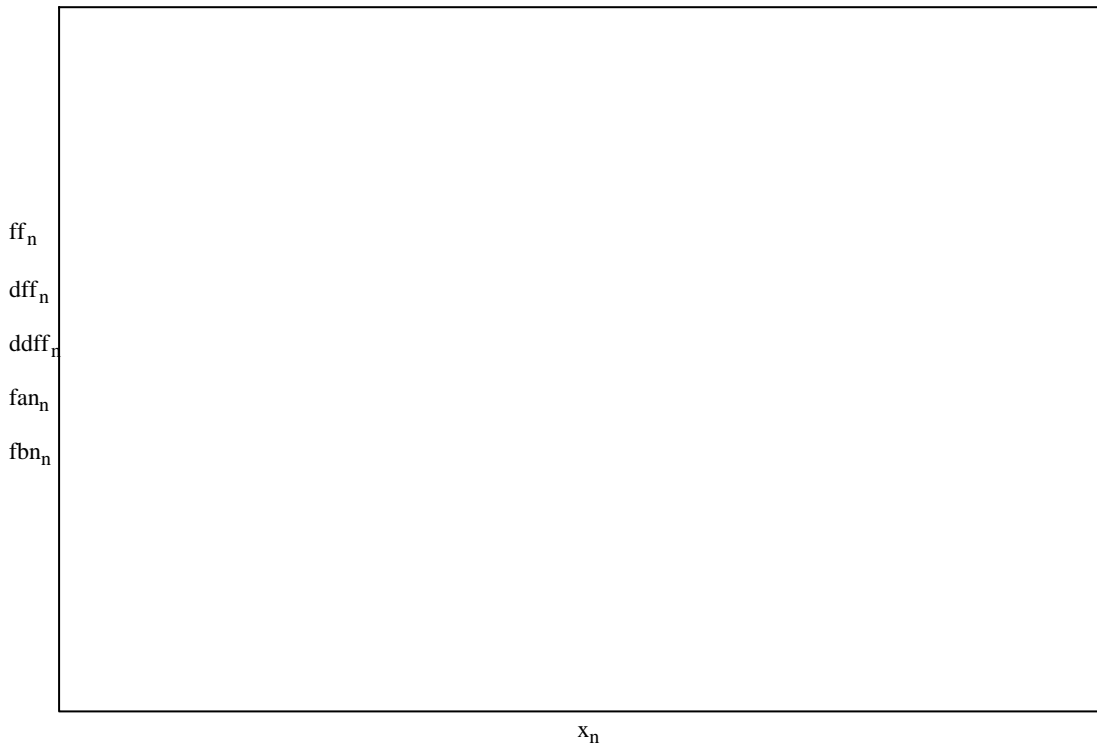
$$f(x) := \sqrt[3]{x^3 + 16} - x$$

$$N := 2001 \quad n := 0..N \quad xa := -15 \quad xb := 15 \quad x_n := xa + \frac{xb - xa}{N} \cdot n$$

$$ff_n := f(x_n) \quad ya := -10 \quad yb := 10$$

$$df(x) := \frac{d}{dx}f(x) \quad dff_n := df(x_n) \quad ddf(x) := \frac{d^2}{dx^2}f(x) \quad dddf_n := ddf(x_n)$$

$$fa(x) := 0 \quad fan_n := fa(x_n) \quad fb(x) := -2x \quad fbn_n := fb(x_n)$$



$$s1 := 1 \quad t1 := \text{Maximize}(f, s1) \quad t1 = \quad f(t1) =$$

$$s2 := 6.1 \quad t2 := \text{Minimize}(f, s2) \quad t2 = \quad f(t2) =$$

$$\text{Given} \quad df(x) = 0 \quad \text{Find}(x) \rightarrow =$$

$$\text{Given} \quad ddf(x) = 0 \quad \text{Find}(x) \rightarrow =$$

$$\lim_{x \rightarrow \infty} \frac{f(x)}{x} \rightarrow \quad k := 0 \quad \lim_{x \rightarrow \infty} (f(x) - k \cdot x) \rightarrow$$

2D4

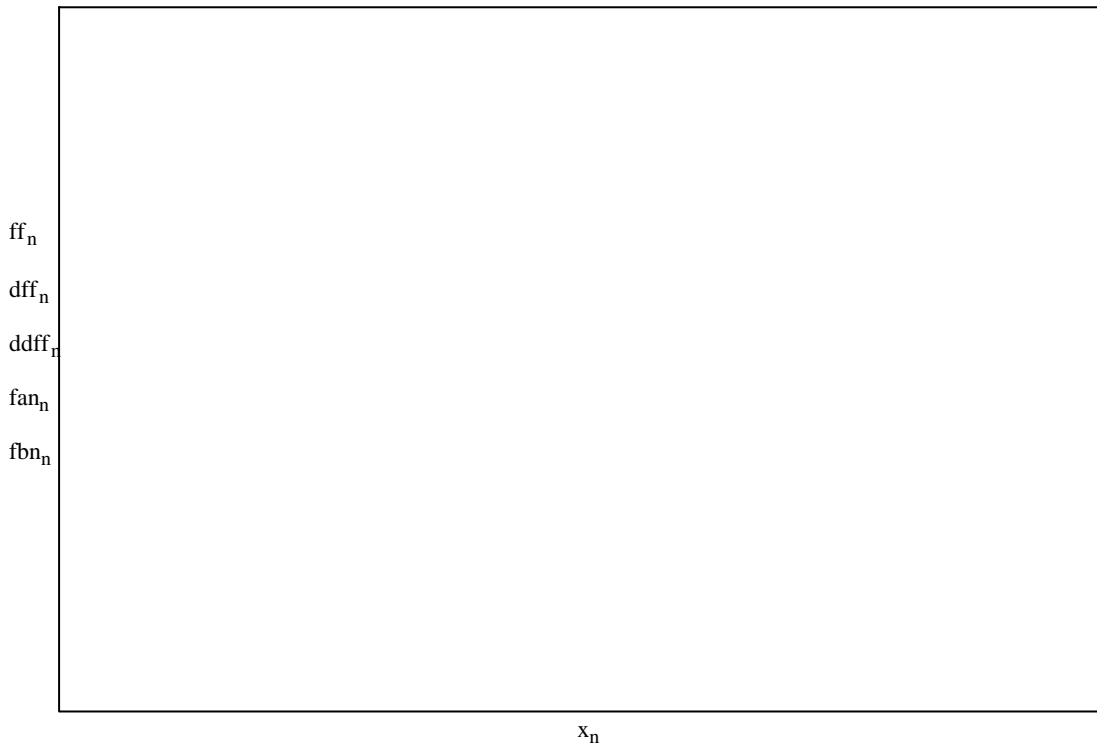
$$f(x) := \sqrt[5]{x^5 + 64} - x$$

$$N := 2001 \quad n := 0..N \quad x_a := -15 \quad x_b := 15 \quad x_n := x_a + \frac{x_b - x_a}{N} \cdot n$$

$$f_n := f(x_n) \quad y_a := -10 \quad y_b := 10$$

$$df(x) := \frac{d}{dx}f(x) \quad dff_n := df(x_n) \quad ddf(x) := \frac{d^2}{dx^2}f(x) \quad ddf_n := ddf(x_n)$$

$$fa(x) := 0 \quad fan_n := fa(x_n) \quad fb(x) := -2x \quad fbn_n := fb(x_n)$$



$$s1 := 1 \quad t1 := \text{Maximize}(f, s1) \quad t1 = \quad f(t1) =$$

$$s2 := 6.1 \quad t2 := \text{Minimize}(f, s2) \quad t2 = \quad f(t2) =$$

$$\text{Given} \quad df(x) = 0 \quad \text{Find}(x) \rightarrow =$$

$$\text{Given} \quad ddf(x) = 0 \quad \text{Find}(x) \rightarrow =$$

$$\lim_{x \rightarrow \infty} \frac{f(x)}{x} \rightarrow \quad k := 0 \quad \lim_{x \rightarrow \infty} (f(x) - k \cdot x) \rightarrow$$