2C1

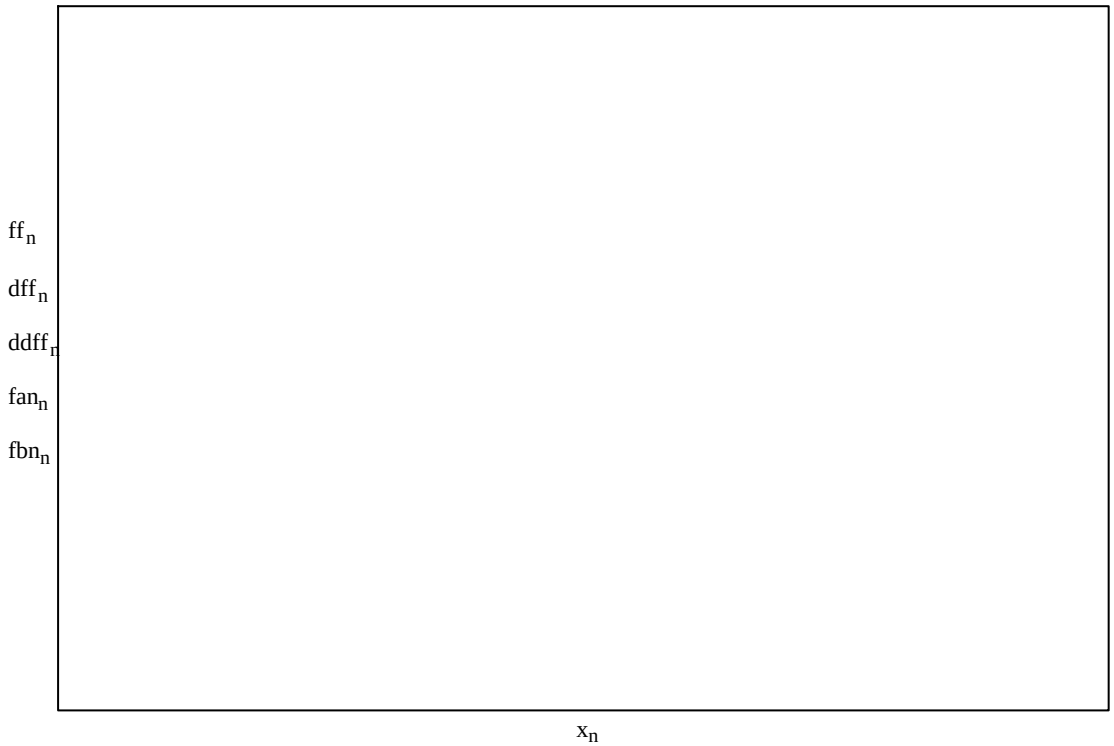
$f(x) := \sqrt{x^2 + 1}$

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

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

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

$fa(x) := x$ $fan_n := fa(x_n)$ $fb(x) := -x$ $fbn_n := fb(x_n)$



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

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

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

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

$\lim_{x \to \infty} \frac{f(x)}{x} \rightarrow$ $k := 1$ $\lim_{x \to \infty} (f(x) - k \cdot x) \rightarrow$

2C2

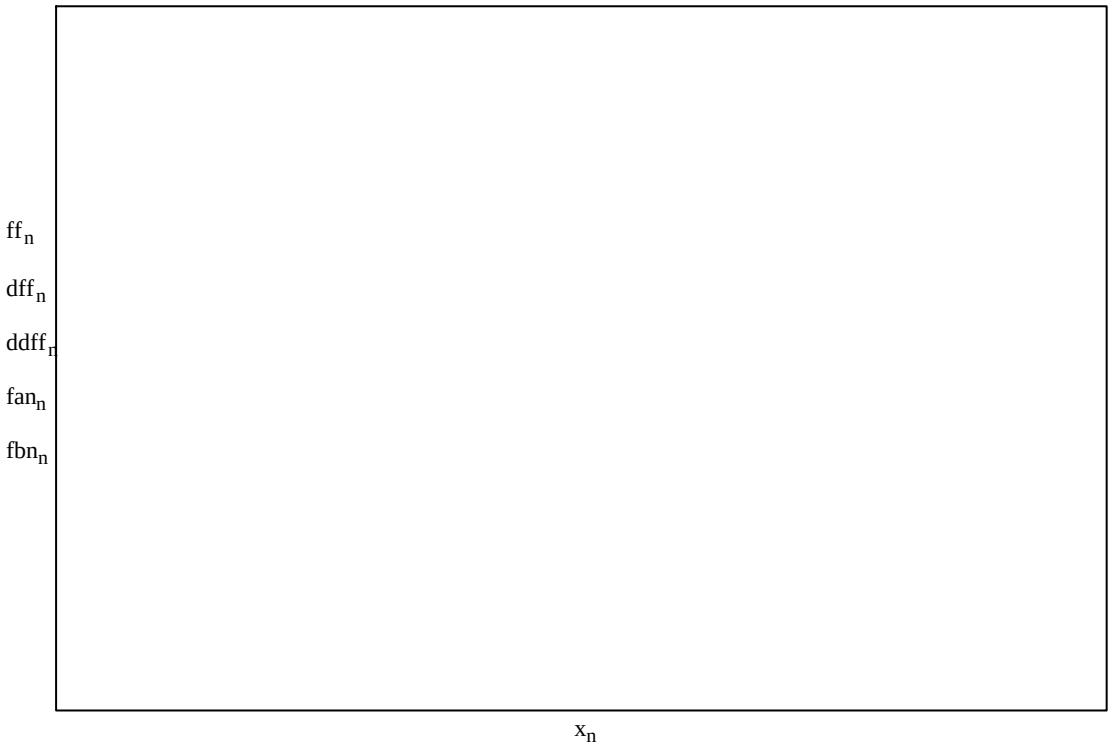
$$f(x) := \sqrt{x^2 - 1}$$

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

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

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

$fa(x) := x$ $fan_n := fa(x_n)$ $fb(x) := -x$ $fbn_n := fb(x_n)$



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

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

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

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

$\lim_{x \to \infty} \frac{f(x)}{x} \rightarrow$ $k := 1$ $\lim_{x \to \infty} (f(x) - k \cdot x) \rightarrow$

2C3

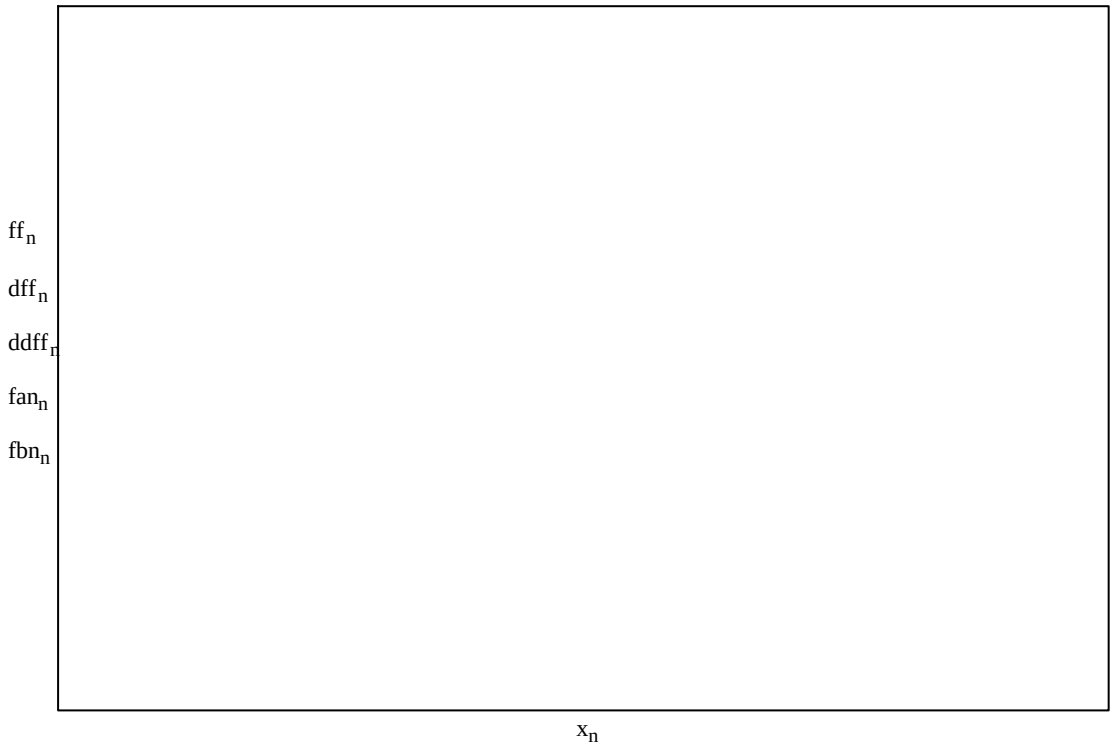
$$f(x) := \sqrt{x^2 - 6x + 5}$$

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

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

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

$fa(x) := x - 3$ $\quad fan_n := fa(x_n)$ $\quad fb(x) := -x + 3$ $\quad fbn_n := fb(x_n)$



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

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

Given $\quad df(x) = 0 \quad$ Find(x)→ =

Given $\quad ddf(x) = 0 \quad$ Find(x)→ =

$\lim_{x \to \infty} \frac{f(x)}{x} \to$ $\quad k := 1 \quad$ $\lim_{x \to \infty} (f(x) - k \cdot x) \to$

2C4

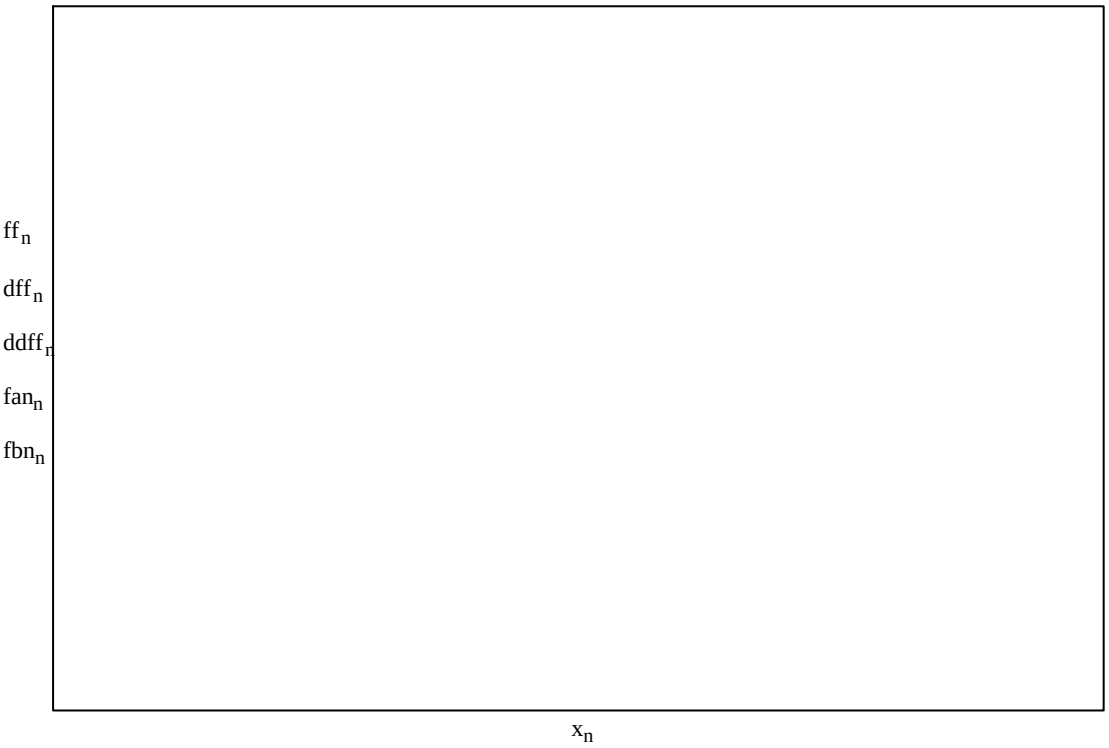
$$f(x) := \sqrt{x^2 - 6x + 10}$$

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

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

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

$fa(x) := x - 3$ $fan_n := fa(x_n)$ $fb(x) := -x + 3$ $fbn_n := fb(x_n)$



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

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

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

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

$\lim_{x \to \infty} \frac{f(x)}{x} \rightarrow$ $k := 1$ $\lim_{x \to \infty} (f(x) - k \cdot x) \rightarrow$

2C5

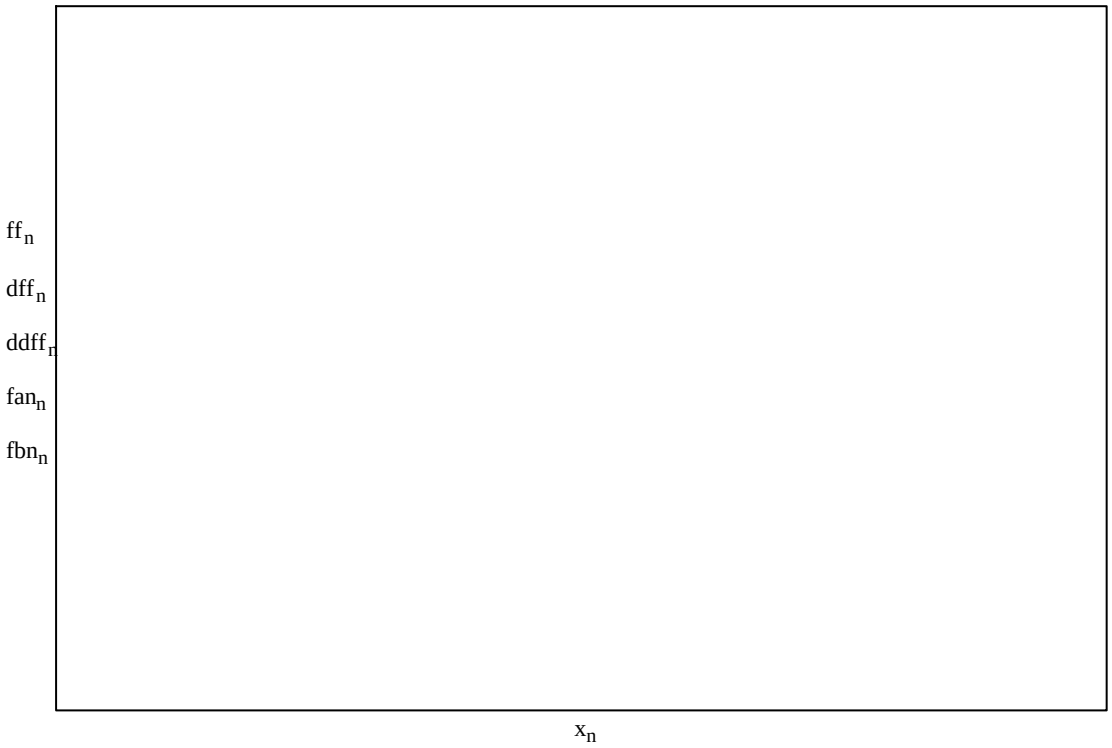
$$f(x) := \sqrt[3]{x^3 + 8}$$

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

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

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

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



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

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

Given $\quad df(x) = 0 \quad$ Find(x)→ =

Given $\quad ddf(x) = 0 \quad$ Find(x)→ =

$\lim_{x \to \infty} \frac{f(x)}{x} \to$ $\quad k := 1 \quad$ $\lim_{x \to \infty} (f(x) - k \cdot x) \to$

2C6

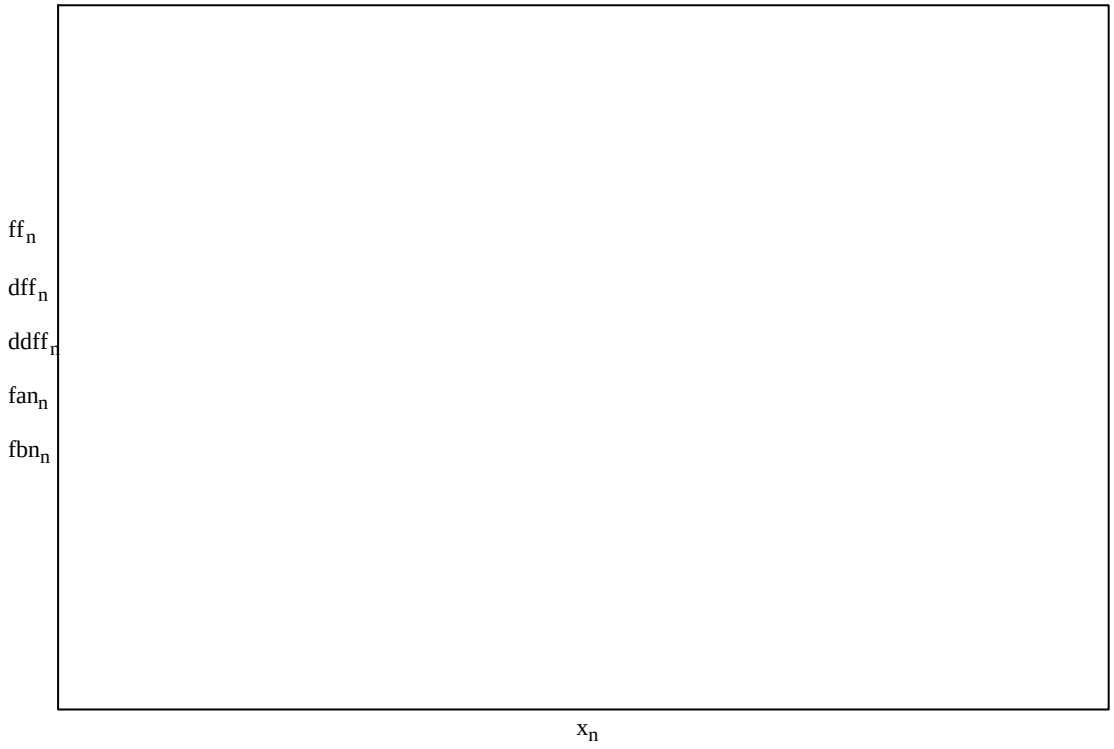
$$f(x) := \sqrt[5]{x^5 + 32}$$

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

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

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

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



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

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

Given $\quad df(x) = 0 \quad$ Find(x)→ $=$

Given $\quad ddf(x) = 0 \quad$ Find(x)→ $=$

$\lim_{x \to \infty} \frac{f(x)}{x} \to$ $\quad k := 1 \quad$ $\lim_{x \to \infty} (f(x) - k \cdot x) \to$

2C7

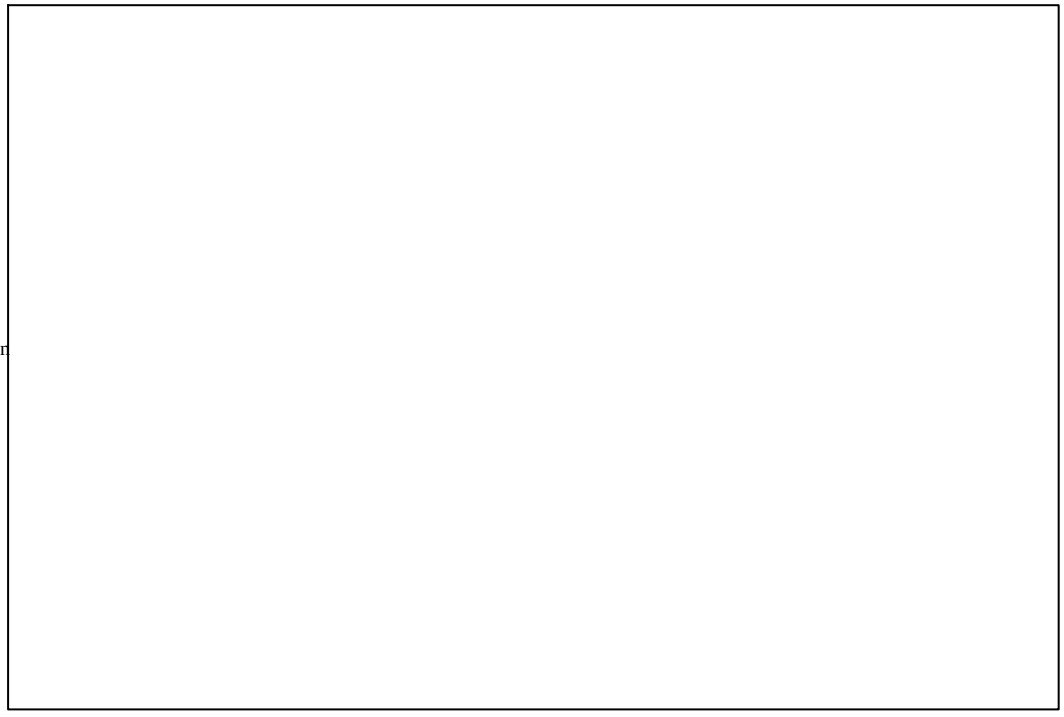
$$f(x) := \sqrt[3]{x^3 + 3x^2}$$

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

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

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

$fa(x) := x + 1$ $fan_n := fa(x_n)$ $fb(x) := 0$ $fbn_n := fb(x_n)$



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

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

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

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

$\lim_{x \to \infty} \frac{f(x)}{x} \rightarrow$ $k := 1$ $\lim_{x \to \infty} (f(x) - k \cdot x) \rightarrow$

2C8

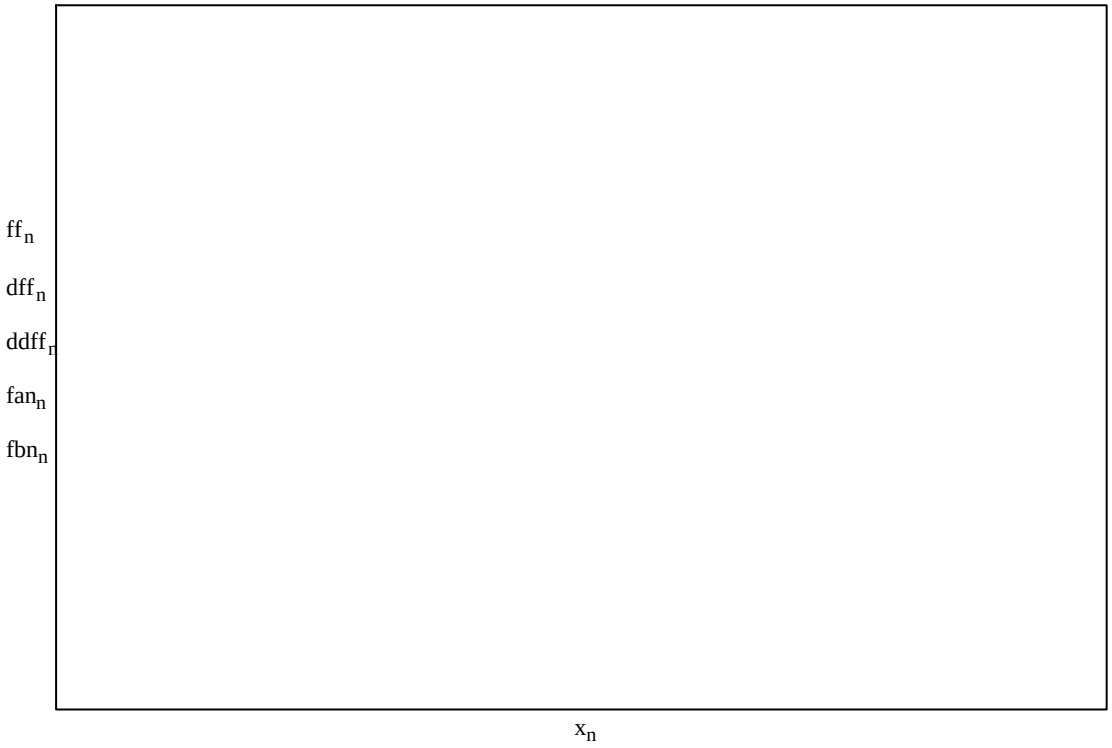
$$f(x) := \sqrt[4]{x^4 + 16}$$

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

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

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

$fa(x) := x$ $fan_n := fa(x_n)$ $fb(x) := -x$ $fbn_n := fb(x_n)$



$s1 := 1$ $t1 := Maximize(f, s1)$ $t1 =$ $f(t1) =$

$s2 := 6.1$ $t2 := Minimize(f, s2)$ $t2 =$ $f(t2) =$

Given $df(x) = 0$ $Find(x) \rightarrow$ $=$

Given $ddf(x) = 0$ $Find(x) \rightarrow$ $=$

$\lim_{x \to \infty} \frac{f(x)}{x} \rightarrow$ $k := 1$ $\lim_{x \to \infty} (f(x) - k \cdot x) \rightarrow$

2C9

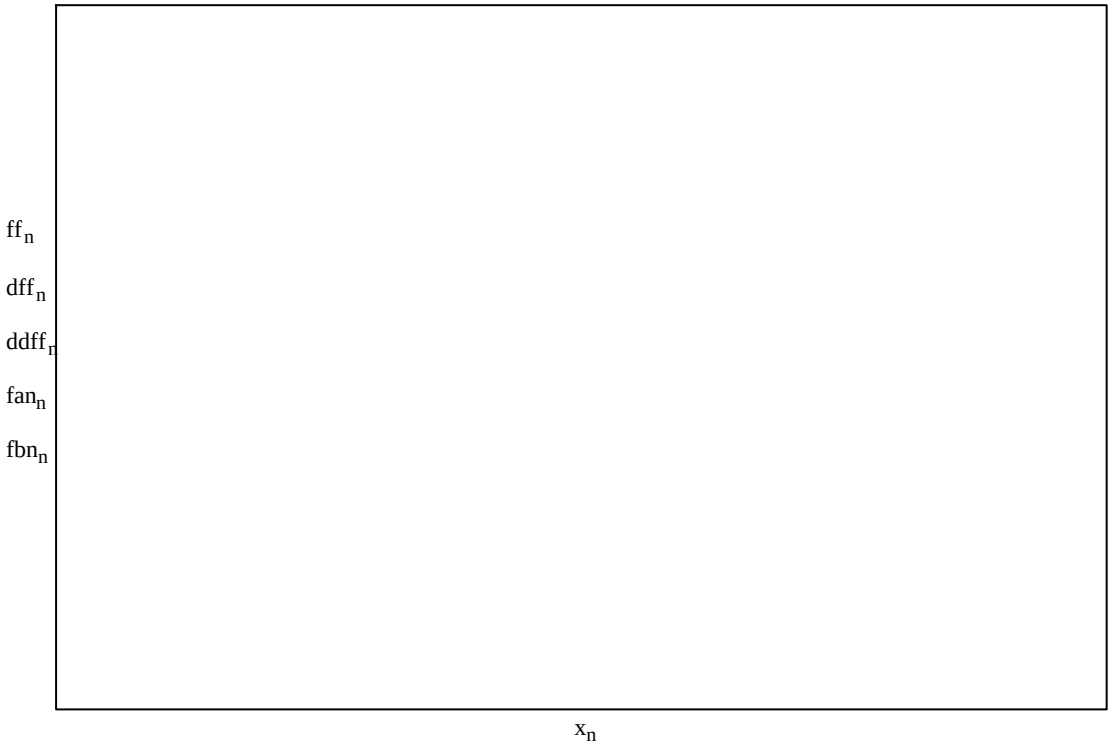
$$f(x) := \sqrt[4]{x^4 + 16 \cdot x^3}$$

$N := 2001$ $n := 0 .. N$ $xa := 0$ $xb := 30$ $x_n := xa + \frac{xb - xa}{N} \cdot n$

$ff_n := f(x_n)$ $ya := 0$ $yb := 20$

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

$fa(x) := x + 4$ $fan_n := fa(x_n)$ $fb(x) := x$ $fbn_n := fb(x_n)$



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

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

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

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

$\lim_{x \to \infty} \frac{f(x)}{x} \rightarrow$ $k := 1$ $\lim_{x \to \infty} (f(x) - k \cdot x) \rightarrow$

2C10

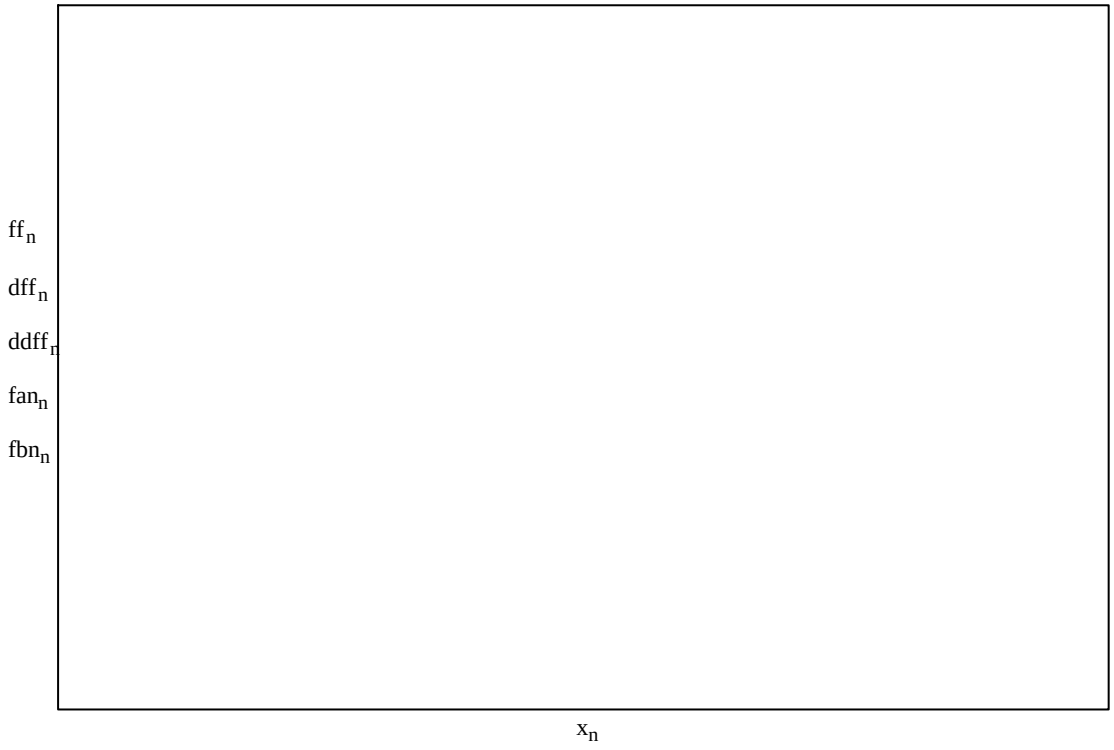
$$f(x) := \sqrt[4]{x^4 - 16 \cdot x^3}$$

$N := 2001$ $n := 0 .. N$ $xa := 0$ $xb := 30$ $x_n := xa + \frac{xb - xa}{N} \cdot n$

$ff_n := f(x_n)$ $ya := 0$ $yb := 20$

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

$fa(x) := x - 4$ $fan_n := fa(x_n)$ $fb(x) := x$ $fbn_n := fb(x_n)$



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

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

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

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

$\lim_{x \to \infty} \frac{f(x)}{x} \rightarrow$ $k := 1$ $\lim_{x \to \infty} (f(x) - k \cdot x) \rightarrow$