3A1

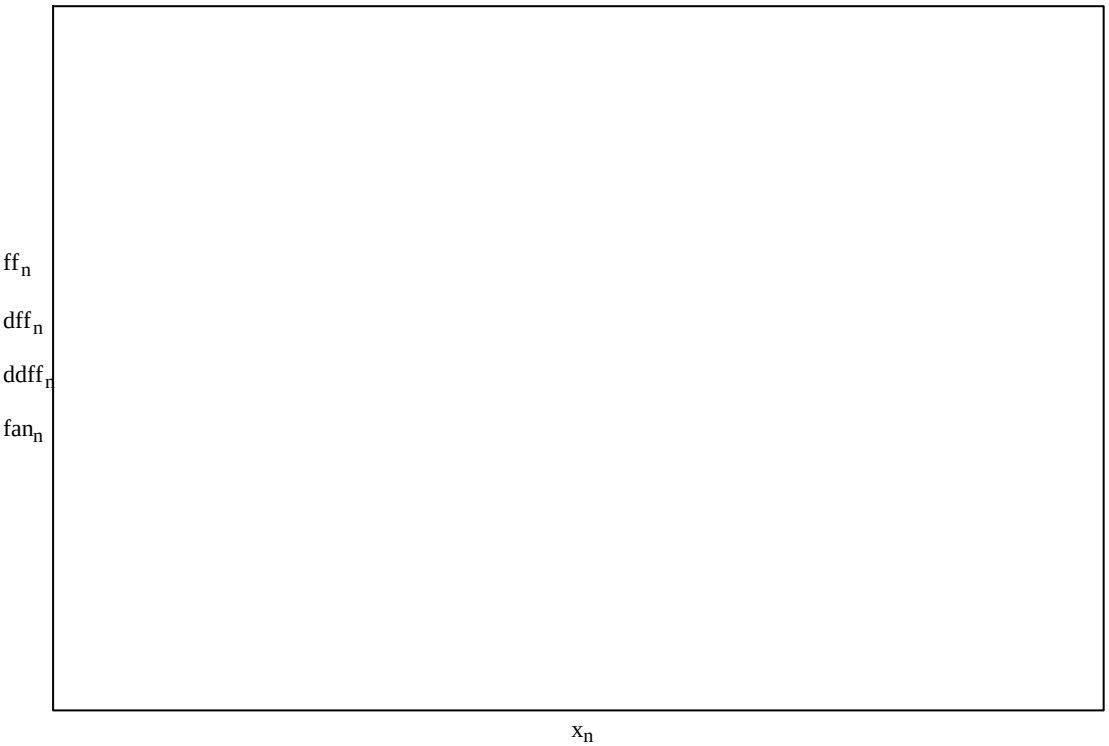
$$f(x) := \sqrt[3]{\frac{x^4}{x-3}}$$

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

$ff_n := f(x_n)$

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

$fa(x) := x + 1$ $fan_n := fa(x_n)$



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

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

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

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

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

3A2

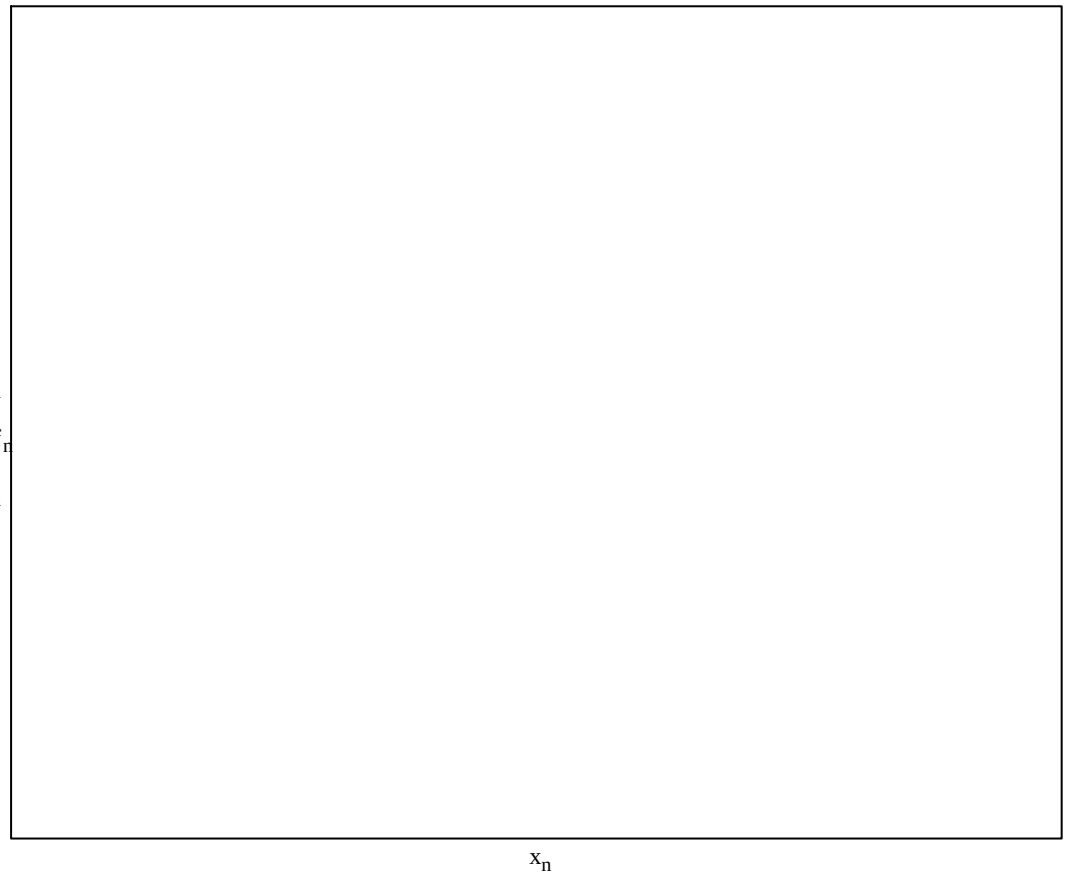
$$f(x) := \sqrt[3]{\frac{x^5}{(x-3)^2}}$$

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

$ff_n := f(x_n)$

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

$fa(x) := x + 1$ $fan_n := fa(x_n)$



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

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

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

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

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

3A3

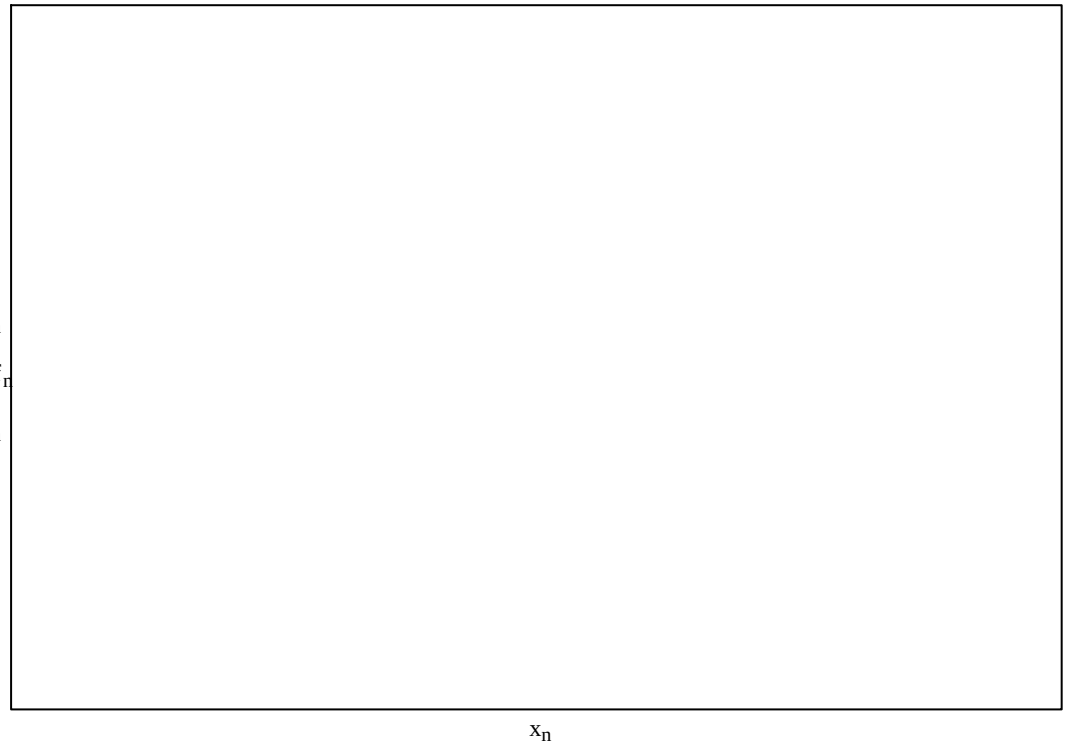
$$f(x) := \sqrt[5]{\frac{x^6}{x + 10}}$$

$N := 2001$ $n := 0 .. N$ $xa := -21$ $xb := 9$ $x_n := xa + \frac{xb - xa}{N} \cdot n$

$ff_n := f(x_n)$

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

$fa(x) := x - 2$ $fan_n := fa(x_n)$



$s1 := -11$ $t1 := \text{Maximize}(f, s1)$ $t1 =$ $f(t1) =$

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

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

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

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

3A4

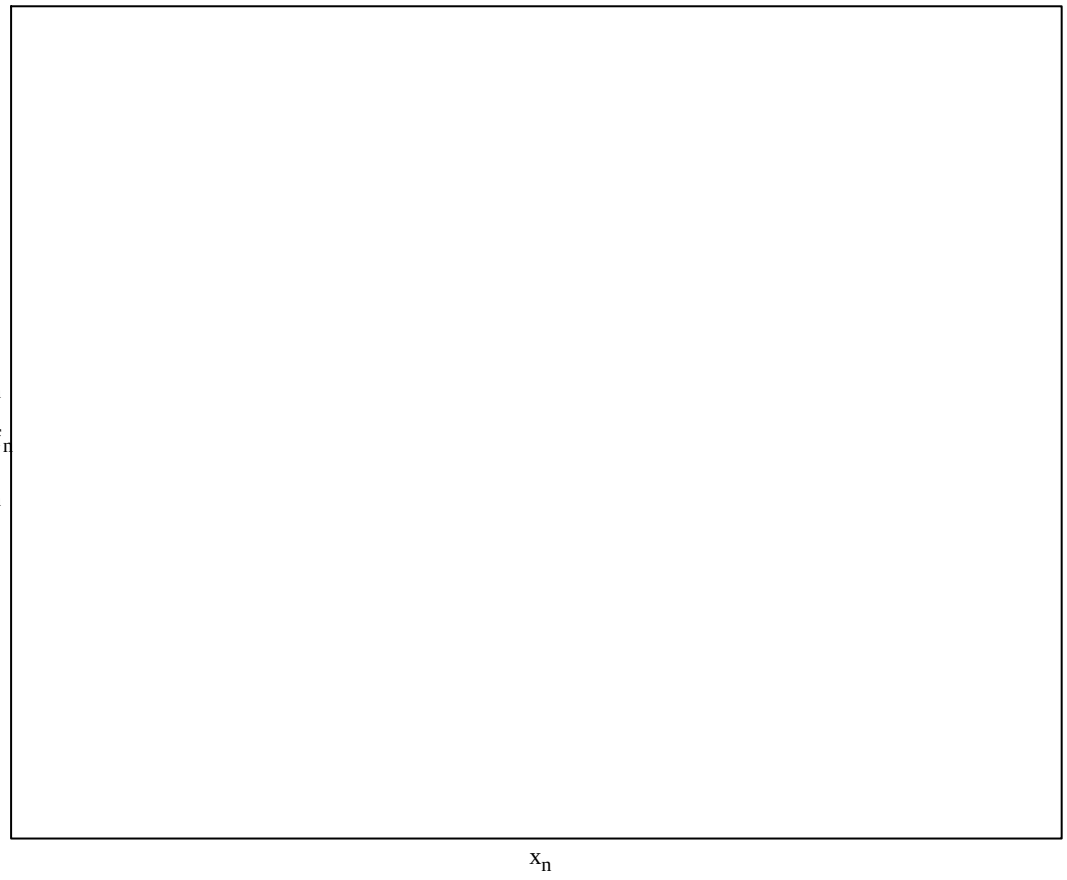
$$f(x) := \sqrt[5]{\frac{x^7}{(x+10)^2}}$$

$N := 2001$ $n := 0 .. N$ $xa := -21$ $xb := 9$ $x_n := xa + \frac{xb - xa}{N} \cdot n$

$ff_n := f(x_n)$

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

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



$s1 := -11$ $t1 := \text{Maximize}(f, s1)$ $t1 =$ $f(t1) =$

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

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

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

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

3A5

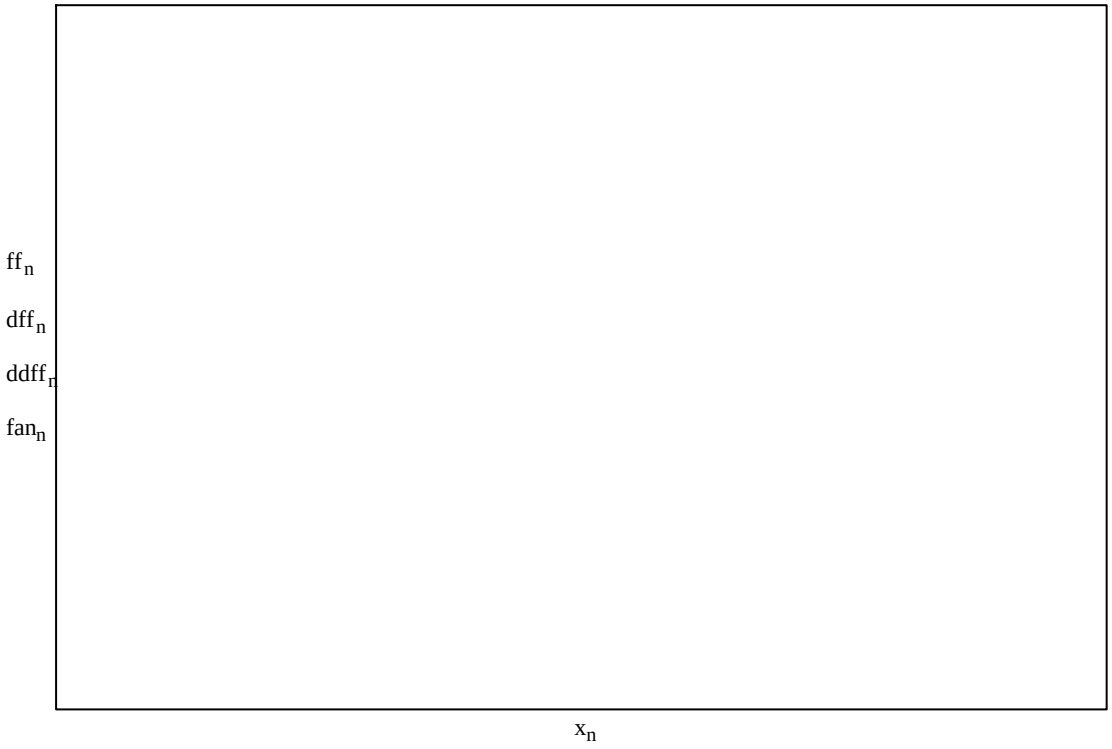
$$f(x) := \sqrt[3]{\frac{x^5}{x^2 - 6}}$$

$N := 2001$ $n := 0 .. N$ $xa := -10$ $xb := 10$ $x_n := xa + \frac{xb - xa}{N} \cdot n$

$ff_n := f(x_n)$

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

$fa(x) := x$ $fan_n := fa(x_n)$



$s1 := -11$ $t1 := \text{Maximize}(f, s1)$ $t1 =$ $f(t1) =$

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

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

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

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

3A6

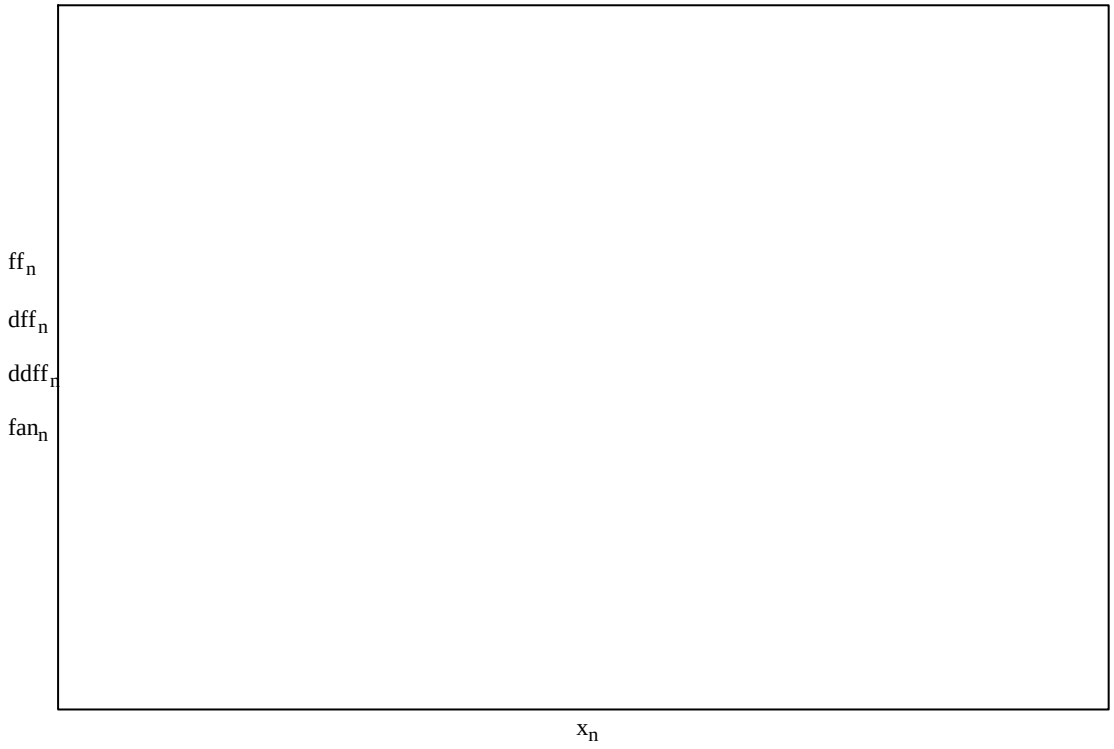
$$f(x) := \sqrt[3]{x\cdot(x-3)^2}$$

$N := 2001$ $n := 0 .. N$ $xa := -10$ $xb := 10$ $x_n := xa + \frac{xb - xa}{N}\cdot n$

$ff_n := f(x_n)$

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

$fa(x) := x$ $fan_n := fa(x_n)$



$s1 := 2$ $t1 := Maximize(f, s1)$ $t1 =$ $f(t1) =$

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

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

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

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

3A7

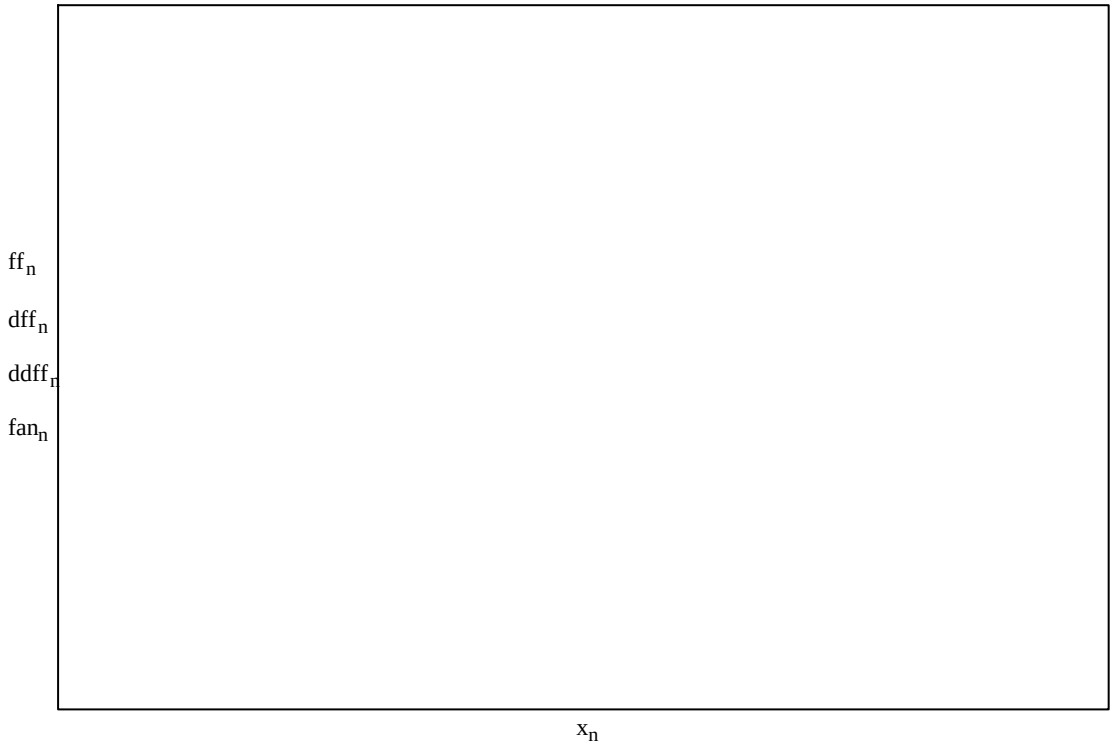
$$f(x) := \sqrt[3]{\left(x^2 - 12\right)\cdot x}$$

$N := 2001$ $n := 0 .. N$ $xa := -10$ $xb := 10$ $x_n := xa + \frac{xb - xa}{N}\cdot n$

$ff_n := f\left(x_n\right)$

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

$fa(x) := x$ $fan_n := fa\left(x_n\right)$



$s1 := -11$ $t1 := \text{Maximize}(f, s1)$ $t1 =$ $f(t1) =$

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

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

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

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

3A8

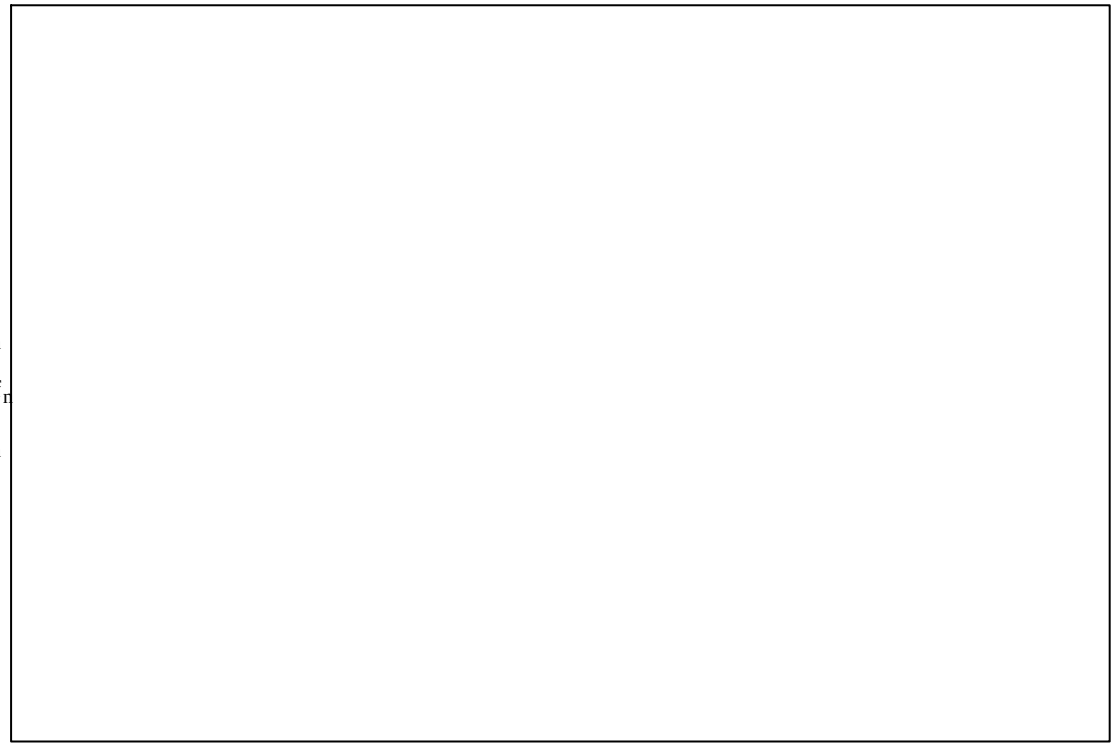
$$f(x) := \sqrt[5]{(x-10)^3 \cdot x^2}$$

$N := 2001$ $n := 0 .. N$ $xa := -10$ $xb := 30$ $x_n := xa + \frac{xb - xa}{N} \cdot n$

$ff_n := f(x_n)$

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

$fa(x) := x - 6$ $fan_n := fa(x_n)$



$s1 := -11$ $t1 := \text{Maximize}(f, s1)$ $t1 =$ $f(t1) =$

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

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

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

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

3A9

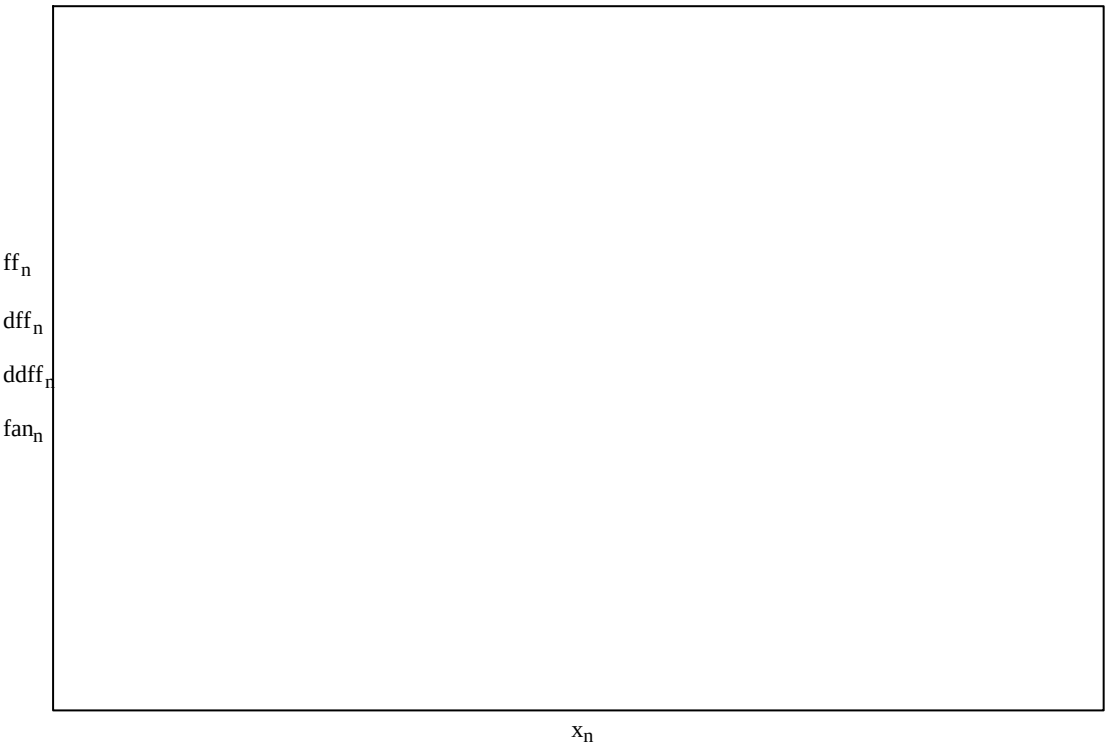
$$f(x) := \sqrt[7]{x^3 \cdot (x - 14)^4}$$

$N := 2001$ $n := 0 .. N$ $xa := -10$ $xb := 30$ $x_n := xa + \frac{xb - xa}{N} \cdot n$

$ff_n := f(x_n)$

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

$fa(x) := x - 8$ $fan_n := fa(x_n)$



$s1 := -11$ $t1 := \text{Maximize}(f, s1)$ $t1 =$ $f(t1) =$

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

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

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

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

3A10

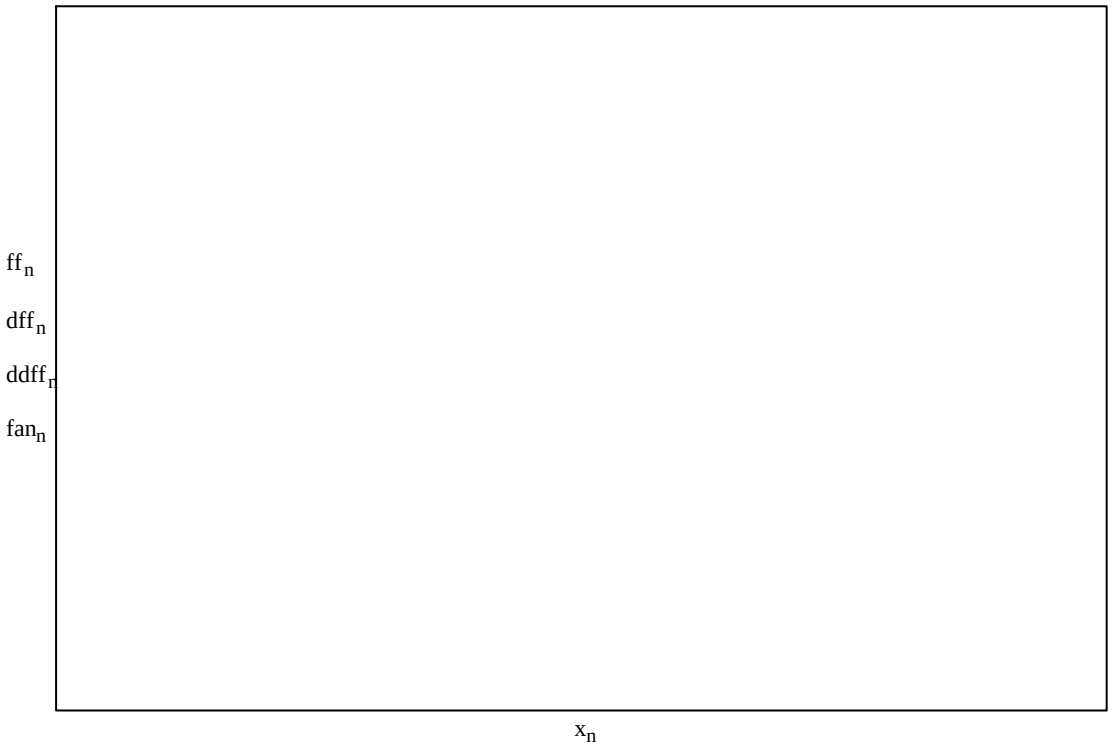
$$f(x) := \sqrt[4]{x \cdot (4 - x)^3}$$

$N := 2001$ $n := 0 .. N$ $xa := -5$ $xb := 5$ $x_n := xa + \frac{xb - xa}{N} \cdot n$

$ff_n := f(x_n)$

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

$fa(x) := x - 8$ $fan_n := fa(x_n)$



$s1 := -11$ $t1 := Maximize(f, s1)$ $t1 =$ $f(t1) =$

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

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

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

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