2A1

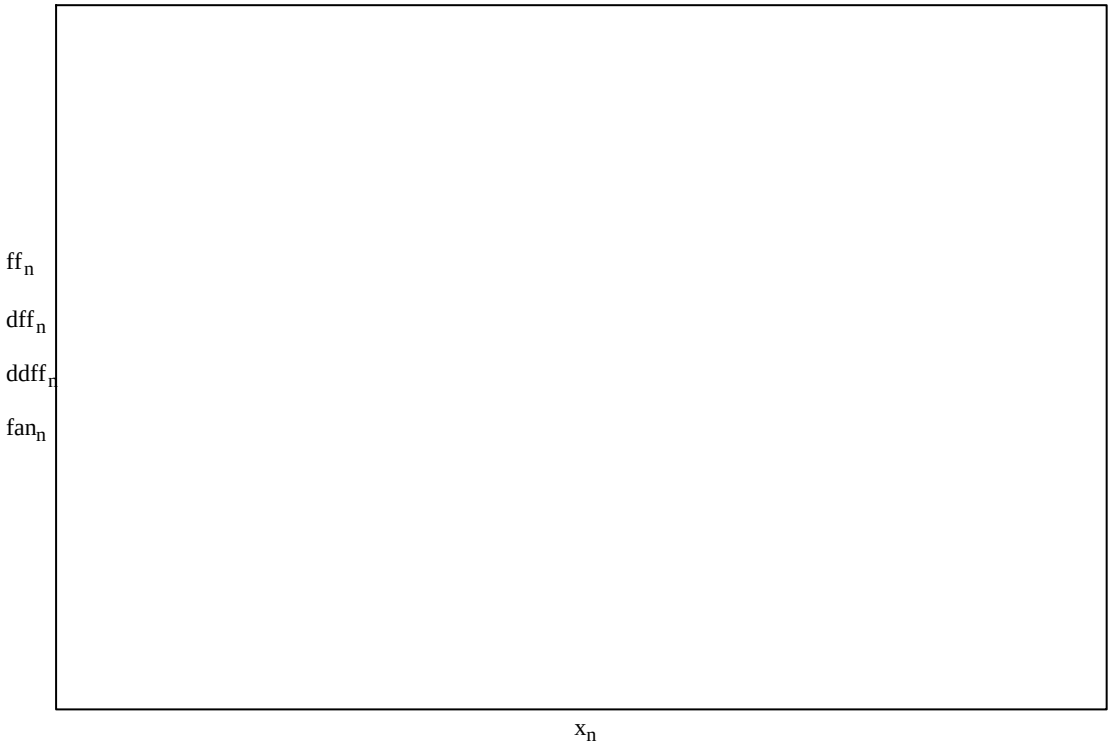
$$f(x) := \frac{x}{x^2 - 4}$$

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

$ff_n := f(x_n)$

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

$fa(x) := 0$ $fan_n := fa(x_n)$



$s1 := -2$ $t1 := \text{Maximize}(f, s1)$ $t1 =$ $f(t1) =$

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

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

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

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

2B2

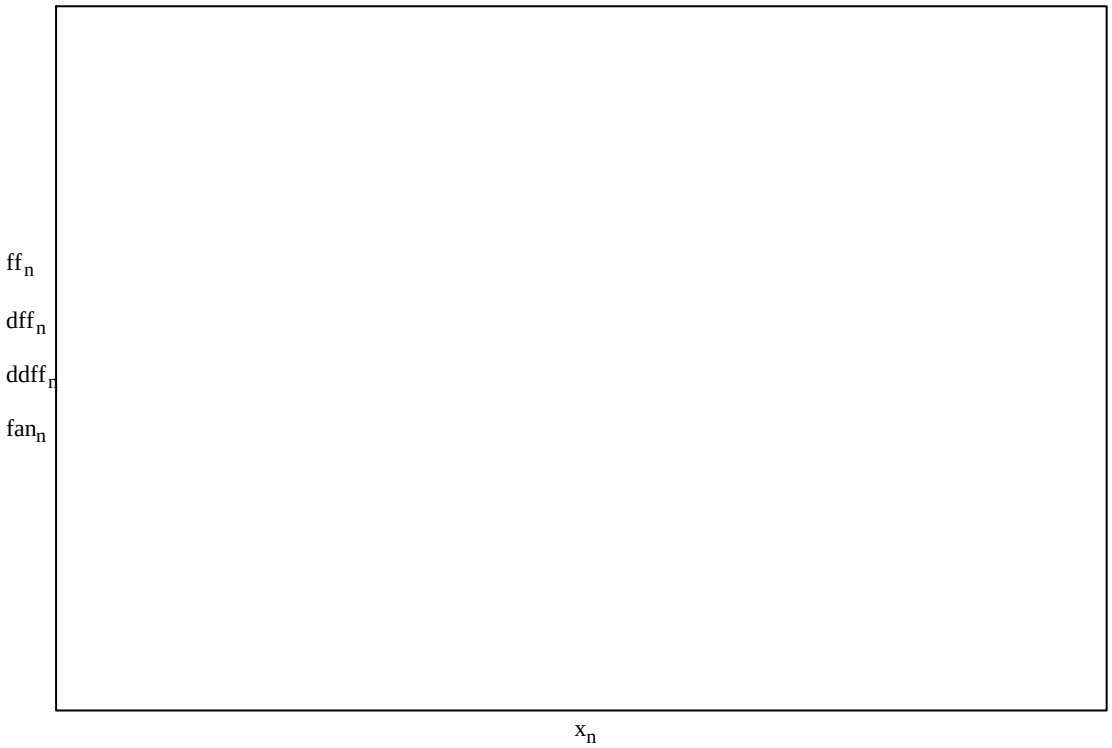
$$f(x) := \frac{x^2}{x^2 - 16}$$

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

$ff_n := f(x_n)$

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

$fa(x) := 0$ $fan_n := fa(x_n)$



$s1 := -2$ $t1 := \text{Maximize}(f, s1)$ $t1 =$ $f(t1) =$

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

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

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

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

2B3

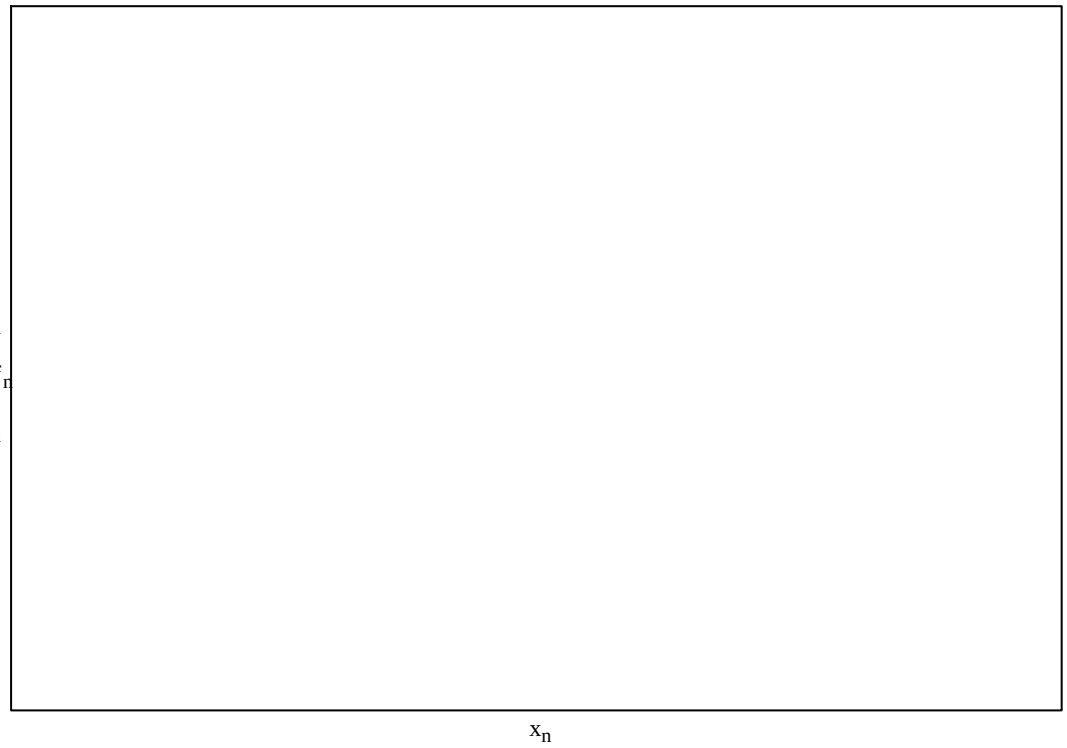
$$f(x) := \frac{x^2}{x - 4}$$

$N := 2001$ $n := 0 .. N$ $xa := -10$ $xb := 20$ $x_n := xa + \frac{xb - xa}{N} \cdot n$

$ff_n := f(x_n)$

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

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



$s1 := -2$ $t1 := \text{Maximize}(f, s1)$ $t1 =$ $f(t1) =$

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

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

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

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

2B4

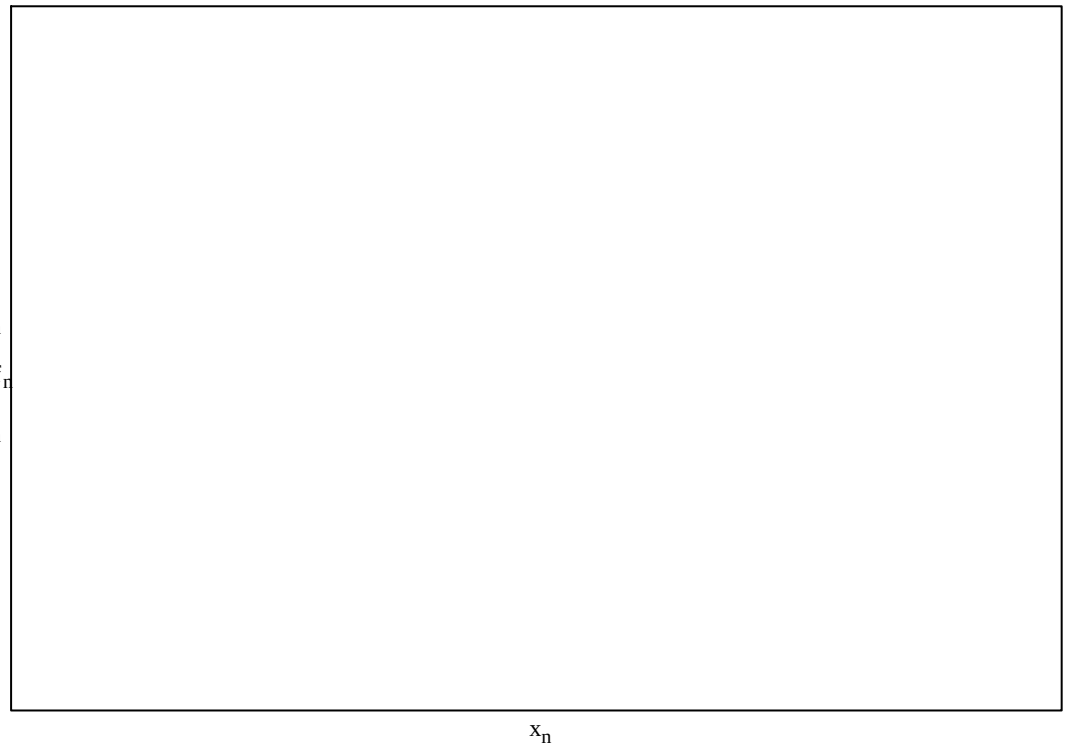
$$f(x) := x + \frac{4}{x}$$

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

$ff_n := f(x_n)$

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

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



$s1 := -2$ $t1 := \text{Maximize}(f, s1)$ $t1 =$ $f(t1) =$

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

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

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

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

2B5

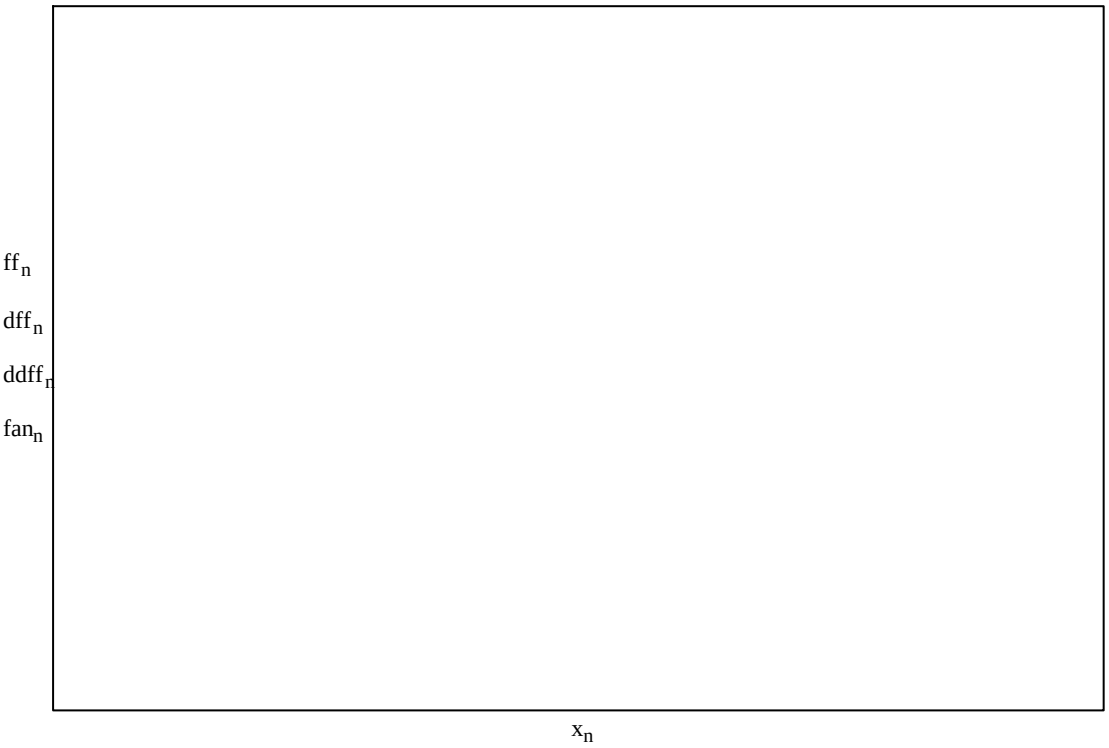
$$f(x) := x^2 + \frac{54}{x}$$

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

$ff_n := f(x_n)$

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

$fa(x) := 0$ $fan_n := fa(x_n)$



$s1 := -2$ $t1 := \text{Maximize}(f, s1)$ $t1 =$ $f(t1) =$

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

Given $df(x) = 0$

$\text{Find}(x) \rightarrow =$

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

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

2B6

$$f(x) := x^3 + \frac{48}{x}$$

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

$ff_n := f(x_n)$

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

$fa(x) := 0$ $fan_n := fa(x_n)$

$s1 := -2$ $t1 := \text{Maximize}(f, s1)$ $t1 =$ $f(t1) =$

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

Given $df(x) = 0$

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

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

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

2B7

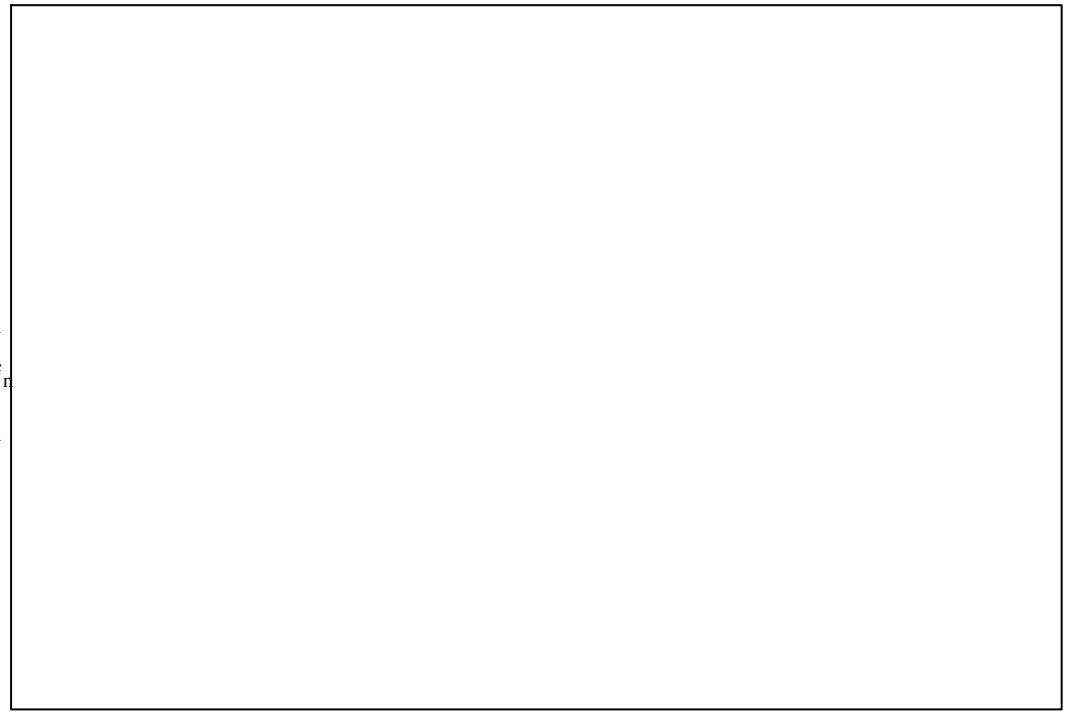
$$f(x) := x^3 + \frac{48}{x^2}$$

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

$ff_n := f(x_n)$

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

$fa(x) := 0$ $fan_n := fa(x_n)$



$s1 := -2$ $t1 := \text{Maximize}(f, s1)$ $t1 =$ $f(t1) =$

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

Given $df(x) = 0$

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

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

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

2B8

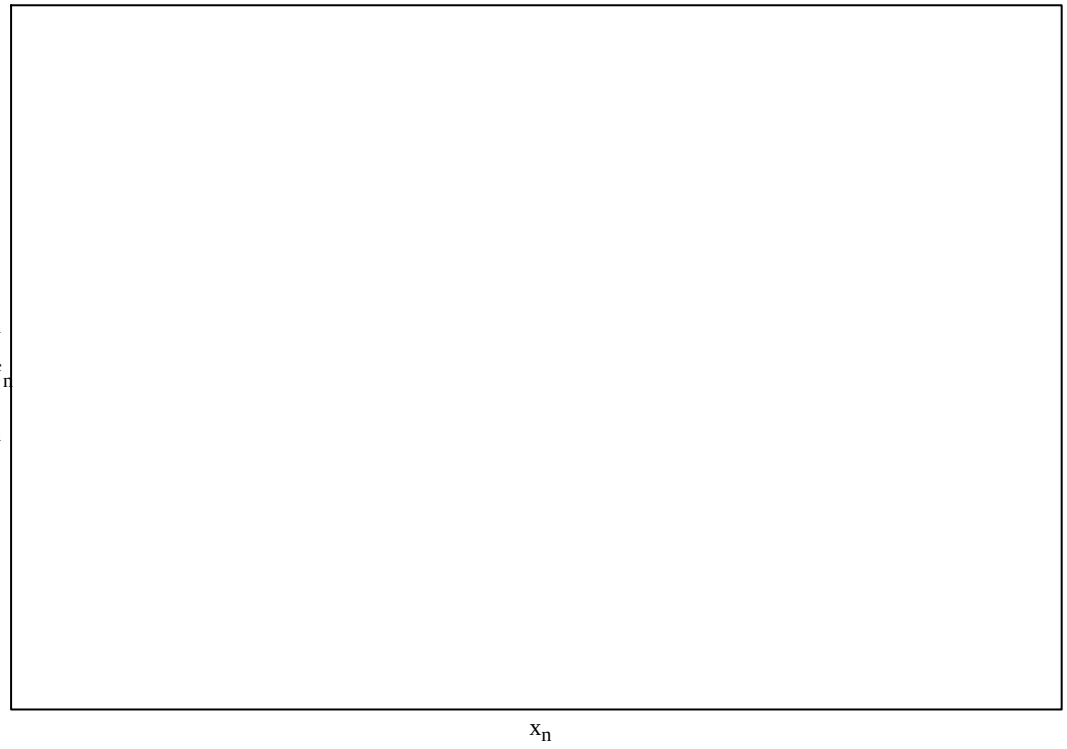
$$f(x) := x^2 + \frac{81}{x^2}$$

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

$ff_n := f(x_n)$

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

$fa(x) := 0$ $fan_n := fa(x_n)$



$s1 := -2$ $t1 := \text{Minimize}(f, s1)$ $t1 =$ $f(t1) =$

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

Given $df(x) = 0$

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

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

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

2B9

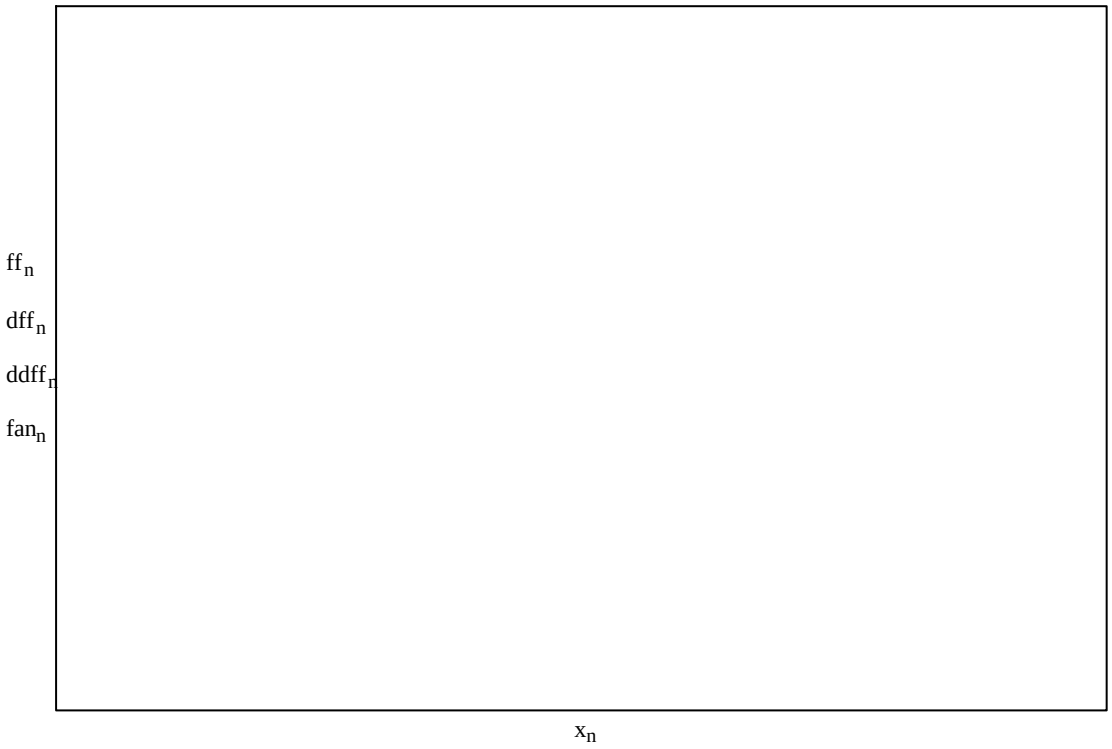
$$f(x) := x + \frac{108}{x^2}$$

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

$ff_n := f(x_n)$

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

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



$s1 := -2$ $t1 := \text{Maximize}(f, s1)$ $t1 =$ $f(t1) =$

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

Given $df(x) = 0$

$\text{Find}(x) \rightarrow =$

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

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