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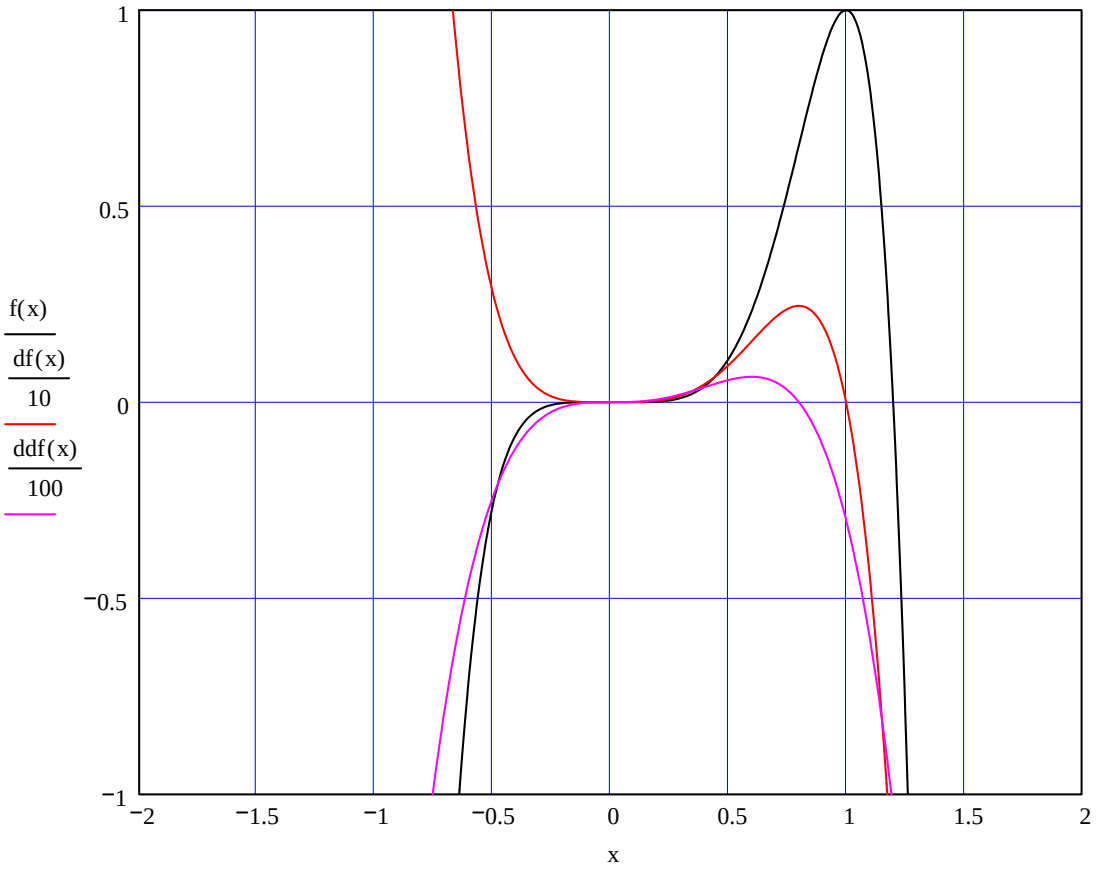
D2(1)

$f(x) := 6 \cdot x^5 - 5 \cdot x^6$ $\quad df(x) := \frac{d}{dx} f(x)$ $\quad ddfa(x) := \frac{d}{dx} df(x)$ $\quad ddf(x) := \frac{d^2}{dx^2} f(x)$

$df(x) \rightarrow 30 \cdot x^4 - 30 \cdot x^5$ $\quad ddf(x) \rightarrow 120 \cdot x^3 - 150 \cdot x^4$



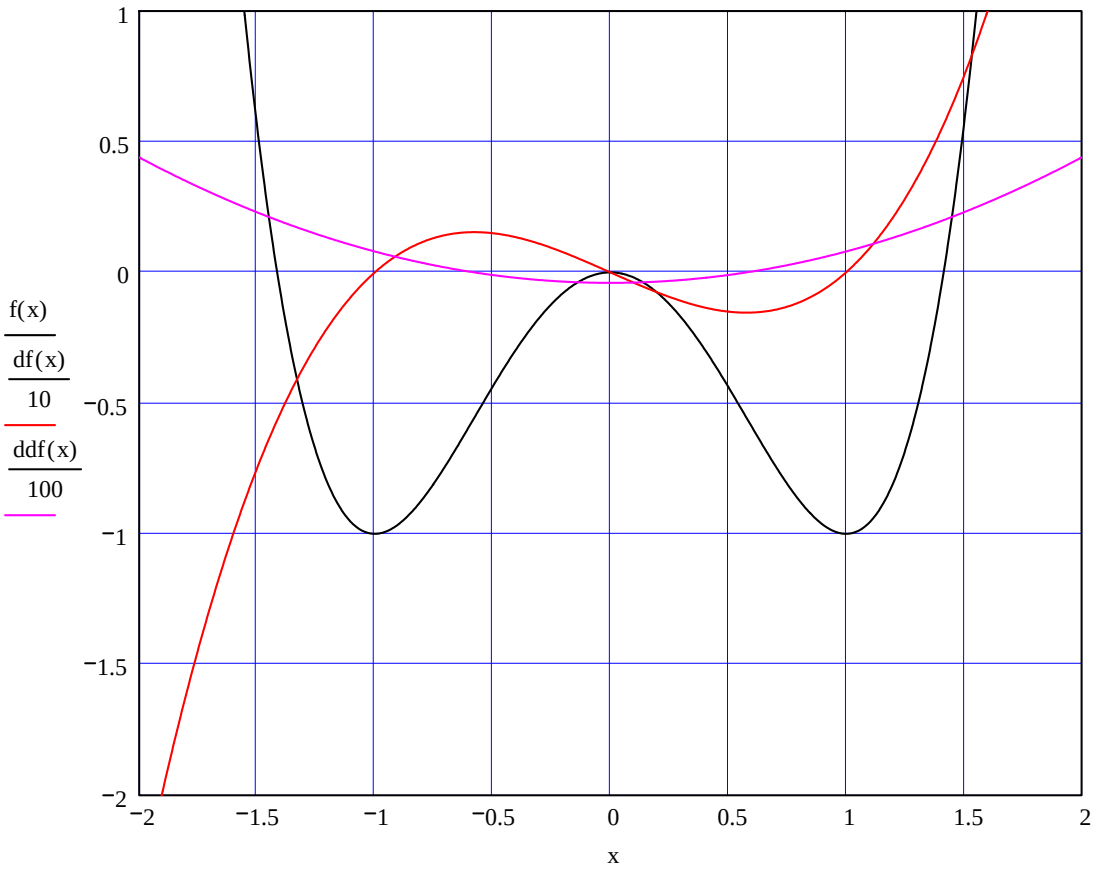
Given $\quad df(x) = 0$ $\quad Find(x) \rightarrow (0 \quad 0 \quad 0 \quad 0 \quad 1)$

$xa := 0$ $\quad ddf(xa) \rightarrow 0$ $\quad xb := 1$ $\quad ddf(xb) \rightarrow -30$

D2(2)

$f(x) := x^4 - 2 \cdot x^2$ $\quad df(x) := \frac{d}{dx} f(x)$ $\quad ddfa(x) := \frac{d}{dx} df(x)$ $\quad ddf(x) := \frac{d^2}{dx^2} f(x)$

$df(x) \rightarrow 4 \cdot x^3 - 4 \cdot x$ $\quad ddf(x) \rightarrow 12 \cdot x^2 - 4$



Given $df(x) = 0$ $Find(x) \rightarrow (0 \quad 1 \quad -1)$

$xa := 0$ $ddf(xa) \rightarrow -4$

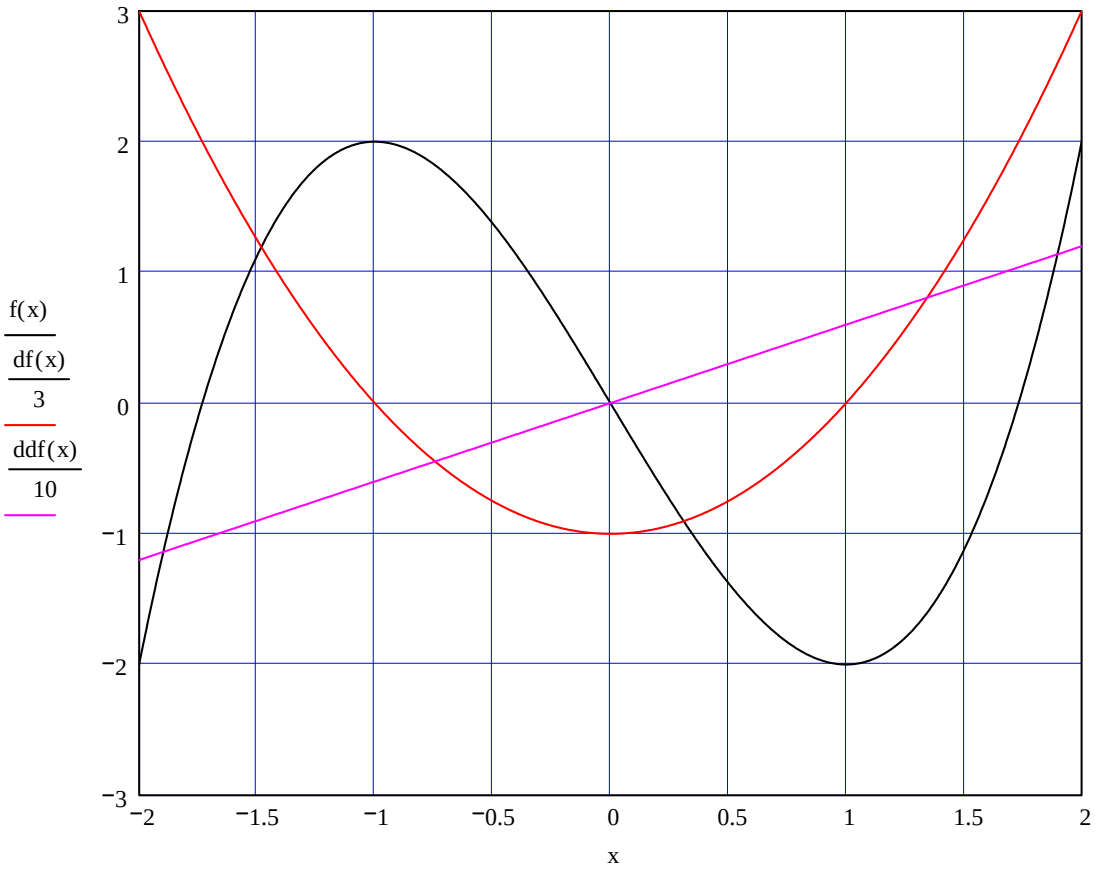
$xb := 1$ $ddf(xb) \rightarrow 8$

$xc := -1$ $ddf(xb) \rightarrow 8$

D2(3)

$f(x) := x^3 - 3 \cdot x$ $df(x) := \frac{d}{dx} f(x)$ $ddfa(x) := \frac{d}{dx} df(x)$ $ddf(x) := \frac{d^2}{dx^2} f(x)$

$df(x) \rightarrow 3 \cdot x^2 - 3$ $ddf(x) \rightarrow 6 \cdot x$



Given $df(x) = 0$ $Find(x) \rightarrow (1 \quad -1)$

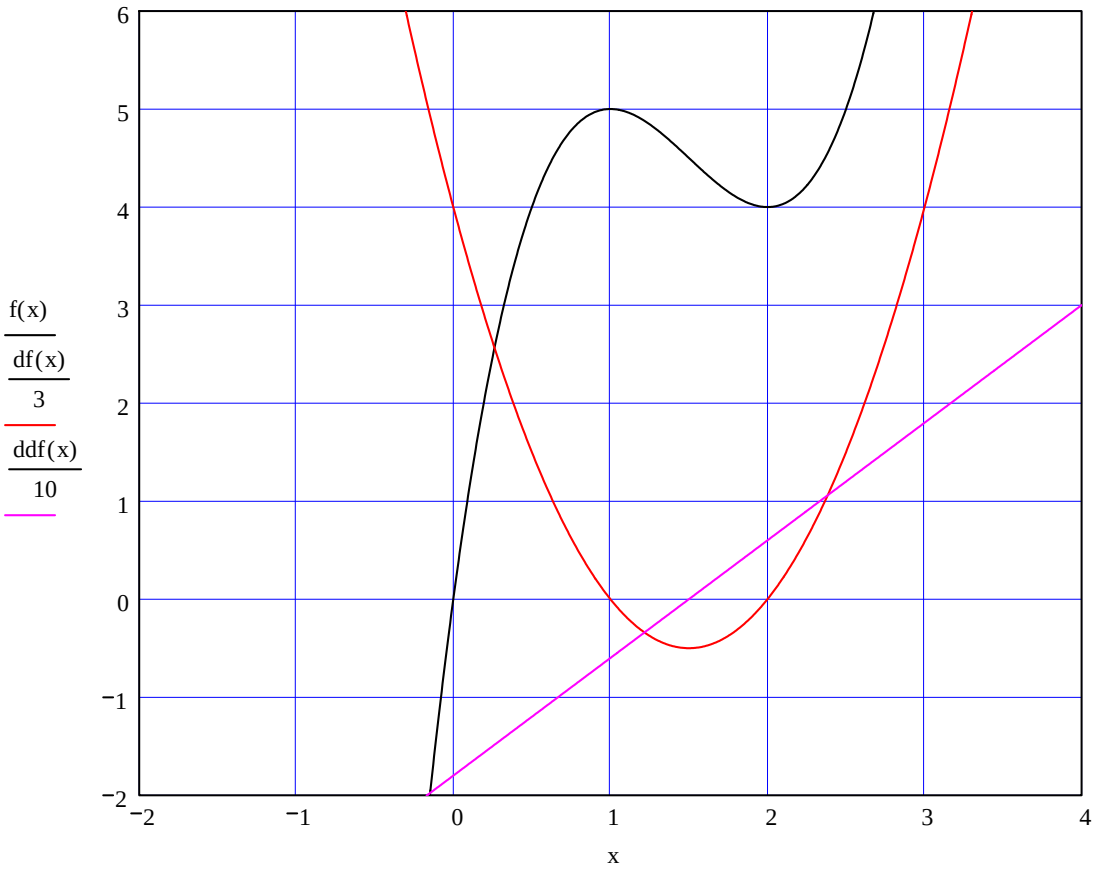
$xa := -1$ $ddf(xa) \rightarrow -6$

$xb := 1$ $ddf(xb) \rightarrow 6$

D2(5)

$f(x) := 2x^3 - 9 \cdot x^2 + 12x$ $df(x) := \frac{d}{dx} f(x)$ $ddfa(x) := \frac{d}{dx} df(x)$ $ddf(x) := \frac{d^2}{dx^2} f(x)$

$df(x) \rightarrow 6 \cdot x^2 - 18 \cdot x + 12$ $ddf(x) \rightarrow 12 \cdot x - 18$



Given $df(x) = 0$ $Find(x) \rightarrow (1 \quad 2)$

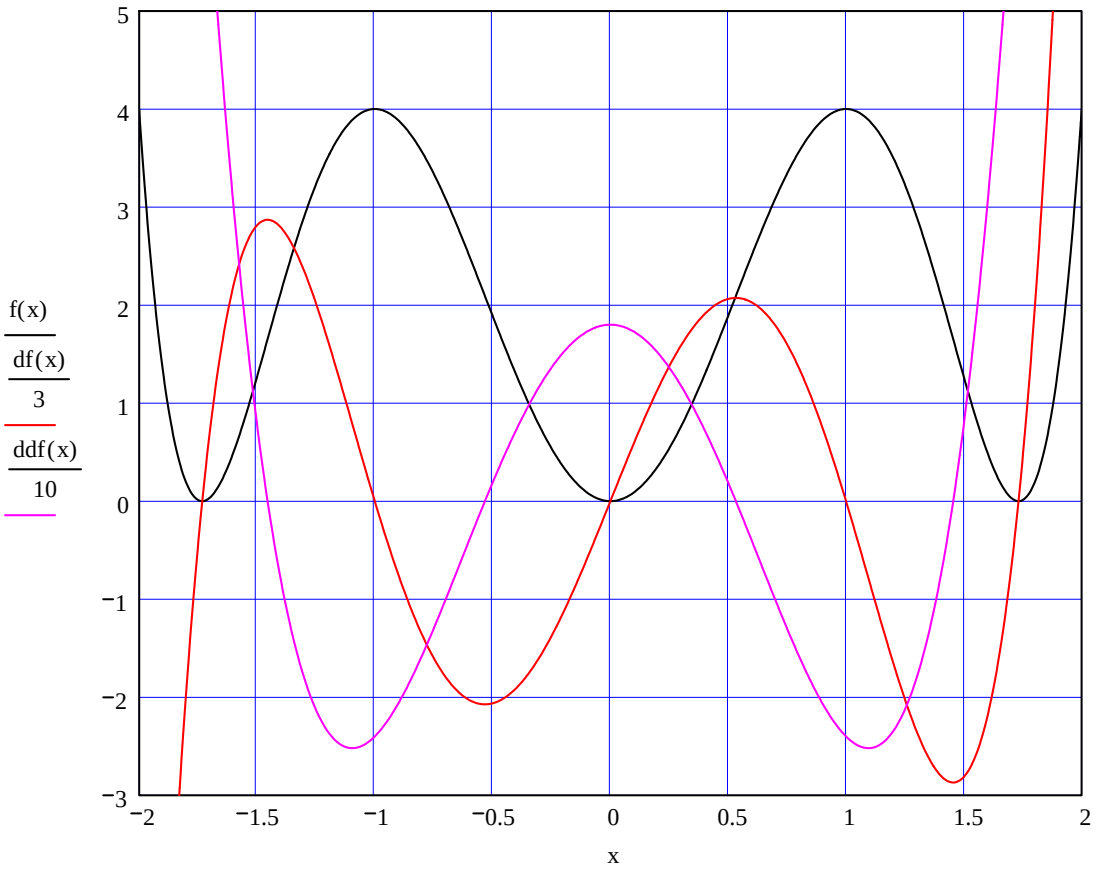
$xa := 1$ $ddf(xa) \rightarrow -6$

$xb := 2$ $ddf(xb) \rightarrow 6$

D2(6)

$f(x) := x^6 - 6 \cdot x^4 + 9x^2$ $df(x) := \frac{d}{dx} f(x)$ $ddf(x) := \frac{d^2}{dx^2} f(x)$

$df(x) \rightarrow 6 \cdot x^5 - 24 \cdot x^3 + 18 \cdot x$ $ddf(x) \rightarrow 30 \cdot x^4 - 72 \cdot x^2 + 18$



Given $df(x) = 0$ $\quad$ Find(x) $\rightarrow \begin{pmatrix} 0 & 1 & -1 & 3^{\frac{1}{2}} & -3^{\frac{1}{2}} \end{pmatrix}$

$xb := 1 \quad ddf(xb) \rightarrow -24$

$xb := -1 \quad ddf(xb) \rightarrow -24$

$xb := 1 \quad ddf(xc) \rightarrow -24$

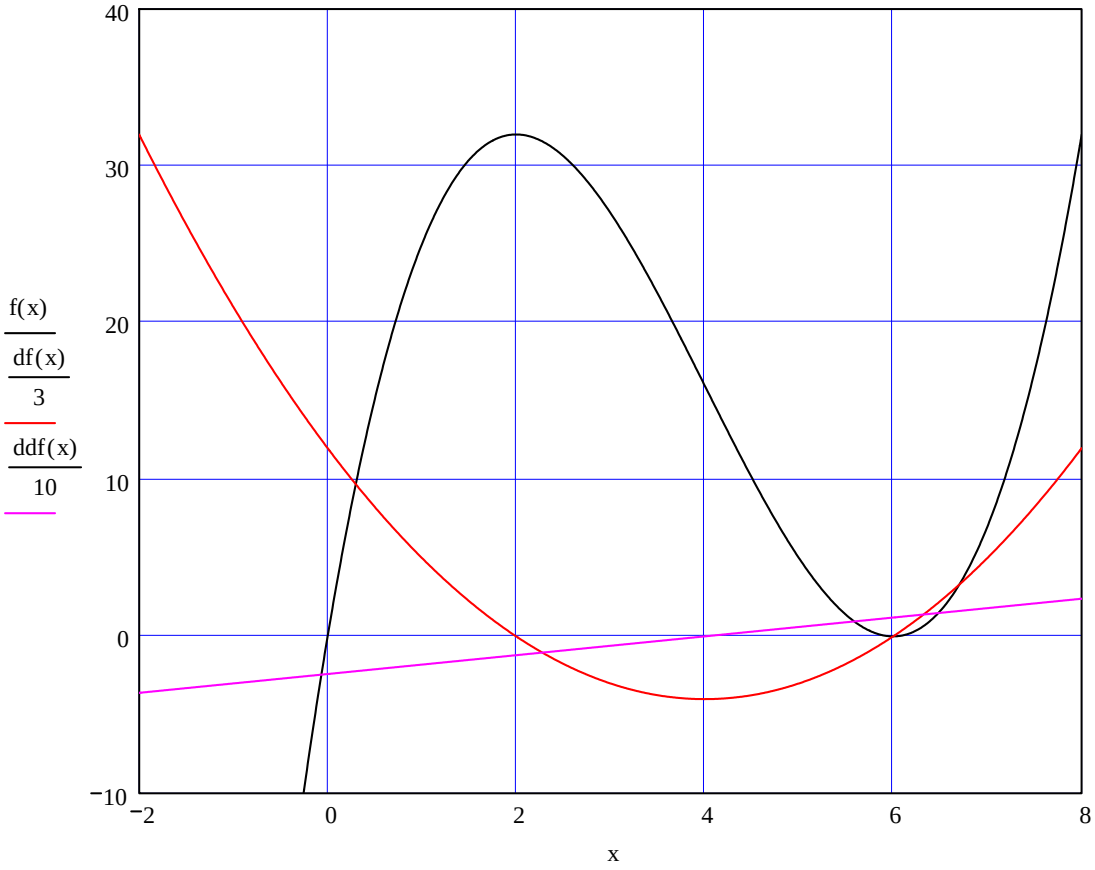
$xm := -\sqrt{3} \quad ddf(xm) \rightarrow 72$

$xn := \sqrt{3} \quad ddf(xn) \rightarrow 72$

D2(7)

$f(x) := x \cdot (6 - x)^2 \qquad df(x) := \frac{d}{dx} f(x) \qquad ddf(x) := \frac{d^2}{dx^2} f(x)$

$df(x) \rightarrow (6 - x)^2 - 2 \cdot x \cdot (6 - x) \qquad ddf(x) \rightarrow 6 \cdot x - 24$



Given $df(x) = 0$ Find$(x) \rightarrow (2 \quad 6)$

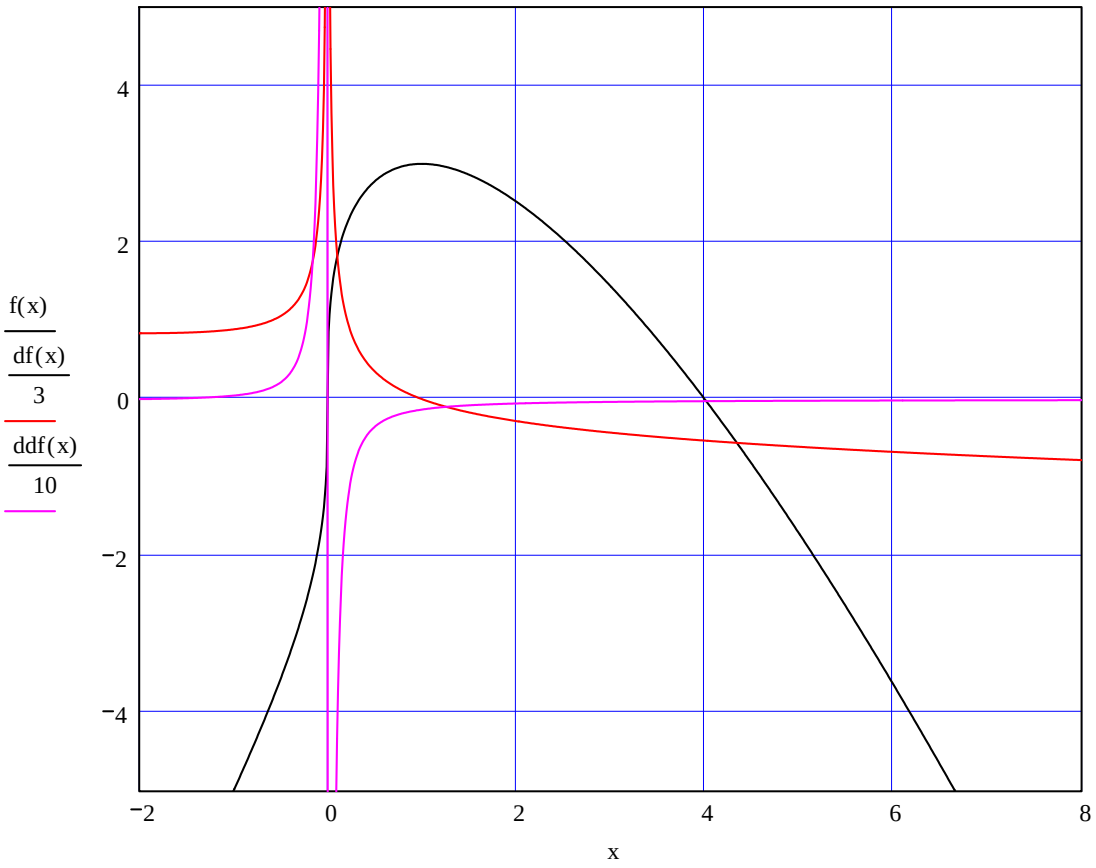
$xa := 2$ $ddf(xa) \rightarrow -12$

$xb := 6$ $ddf(xb) \rightarrow 12$

D2(10)

$f(x) := (4 - x)\cdot\sqrt[3]{x}$ $df(x) := \frac{d}{dx} f(x)$ $ddf(x) := \frac{d^2}{dx^2} f(x)$

$df(x) \rightarrow -x^{\frac{1}{3}} + \frac{1}{3}\cdot\frac{4 - x}{x^{\frac{2}{3}}}$ $ddf(x) \rightarrow \frac{-2}{3\cdot x^{\frac{2}{3}}} - \frac{2}{9}\cdot\frac{4 - x}{x^{\frac{5}{3}}}$



Given $df(x) = 0$ $\text{Find}(x) \rightarrow 1$

$xa := 1$ $ddf(xa) \rightarrow \frac{-4}{3}$