ework: HW 2.1

1 2 3 4 5 6 7

Ex. Score: 0 of 1 pt

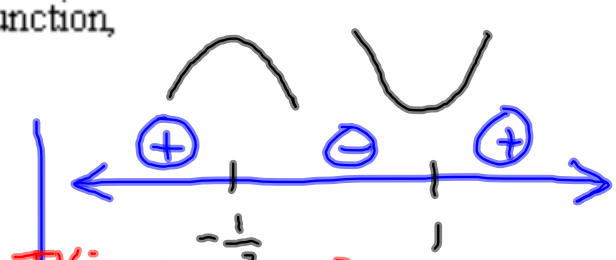
Find the relative extrema of the function, sketch a graph of the function.

$$G(x) = x^3 - x^2 - x + 5$$

$G'(x) = 3x^2 - 2x - 1$

$= (3x + 1)(x - 1)$

CV: $-\frac{1}{3}$, 1



TV: -1 $-\frac{1}{3}$ 0 1 2

Rel. Max at $x = -\frac{1}{3}$ $\left(-\frac{1}{3}, \frac{140}{27}\right)$

Rel. Min at $x = 1$ $(1, 4)$

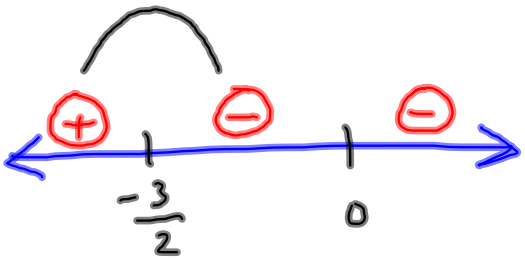
Find the relative extrema of the function
sketch a graph of the function.

$$g(x) = -2x^3 - x^4$$

$$g'(x) = -6x^2 - 4x^3$$

$$= -2x^2(3 + 2x)$$

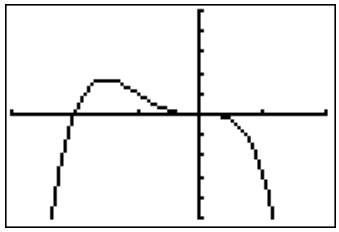
CV: $0, -\frac{3}{2}$



TV: -2 -1 1

Rel Max at

$x = -\frac{3}{2}$ $\left(-\frac{3}{2}, \frac{27}{16}\right)$



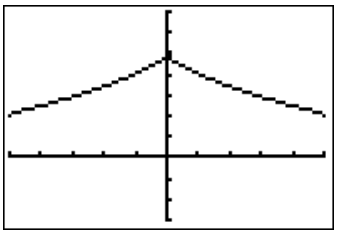
Find the relative extrema of the function, sketch a graph of the function.

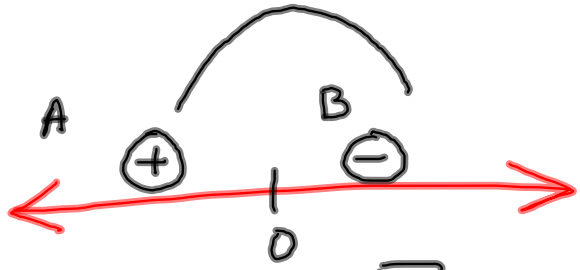
$$f(x) = 5 - x^{\frac{2}{3}}$$

$$f'(x) = 0 - \frac{2}{3}x^{-\frac{1}{3}}$$

$$= \frac{-2}{3\sqrt[3]{x}}$$

CV: 0





TV: $\boxed{-1}$ $\boxed{1}$

inc: $(-\infty, 0)$

dec: $(0, \infty)$

Rel Max at $(0, 5)$

The function given by $A(t) = 0.0275t^3 - 0.457t^2 + 1.855t + 6.25$, $0 \le t \le 10$, can be used to estimate the amount, in billions of dollars, invested by large oil companies in exploration for new reserves t years after 1995. Find the relative extrema.

$A(t) = .0825t^2 - .914t + 1.855$

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X=
        8.402964566
AND
        2.675823313
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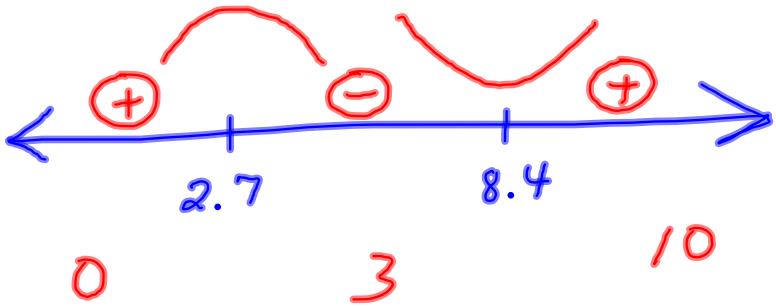

Rel Max in $1995 + 2.7 \approx 1998$

Rel Min in $1995 + 8.4 \approx 2003$

$f(x)=\dfrac{x}{x+1}$, find the relative extrema $\quad x \neq -1$

① Find x- and y-intercepts $(0,0)$

② VA: $x=-1$

HA: $y=1$

③ inc/dec

$$f'(x)=\frac{(x+1)(1)-x(1)}{(x+1)^2}=\frac{1}{(x+1)^2}$$

CV: None

pt of disc: -1