

Good afternoon: no warm up today, when bell rings we will check rel. extrema hw and then continue absolute extrema discussion

How many will be out Friday for the DE English exam...?

$$27.) y = x^{\frac{1}{3}} + 1 = \sqrt[3]{x} + 1$$

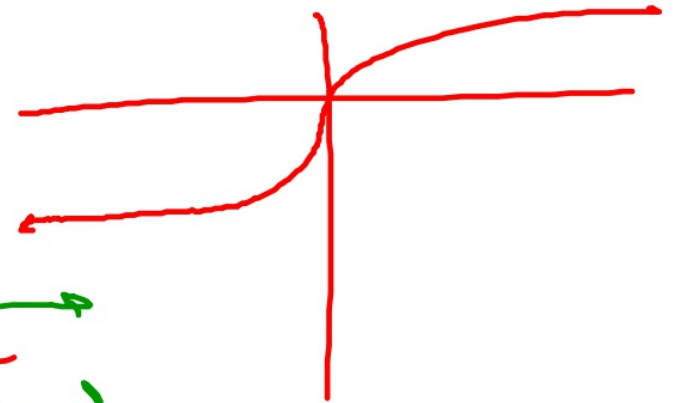
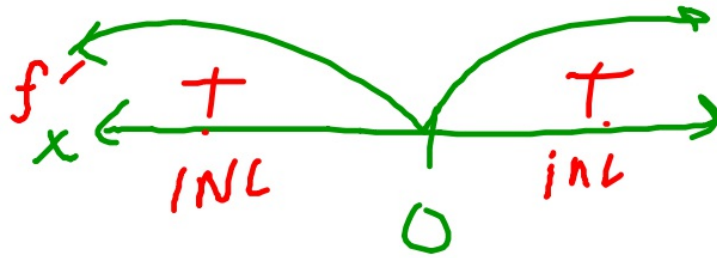
$$y' = \frac{1}{3} x^{-2/3}$$

$$y' = \frac{1}{3x^{2/3}}$$

$$3x^{2/3} = 0$$

$$\frac{x=0}{\text{C.N.}}$$

$$\sqrt[3]{(x)^2}$$



How to find Abs. Ext.

Find the x-coordinates where $f(x)$ has an absolute max and absolute min on $[-3, 1]$ for $f(x) = \frac{1}{4}x^4 - \frac{1}{3}x^3 - 3x^2$

① Find C.N.

$$f'(x) = x^3 - x^2 - 6x = 0$$

$$x(x^2 - x - 6) = 0$$

$$x(x-3)(x+2) = 0$$

$x=0$

~~$x=3$
Not in
 $[-3, 1]$~~

$x=-2$

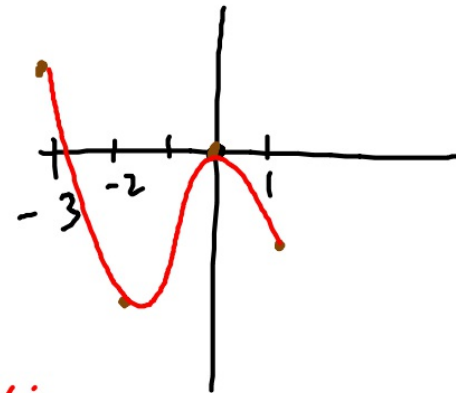
② Plug in C.N. and Endpoints into f

$$f(-3) = 2.25$$

$$f(-2) = -5.333$$

$$f(0) = 0$$

$$f(1) = -\frac{37}{12} = -3.083$$



Abs max:
 $(-3, 2.25)$

Abs Min
 $(-2, -5.333)$

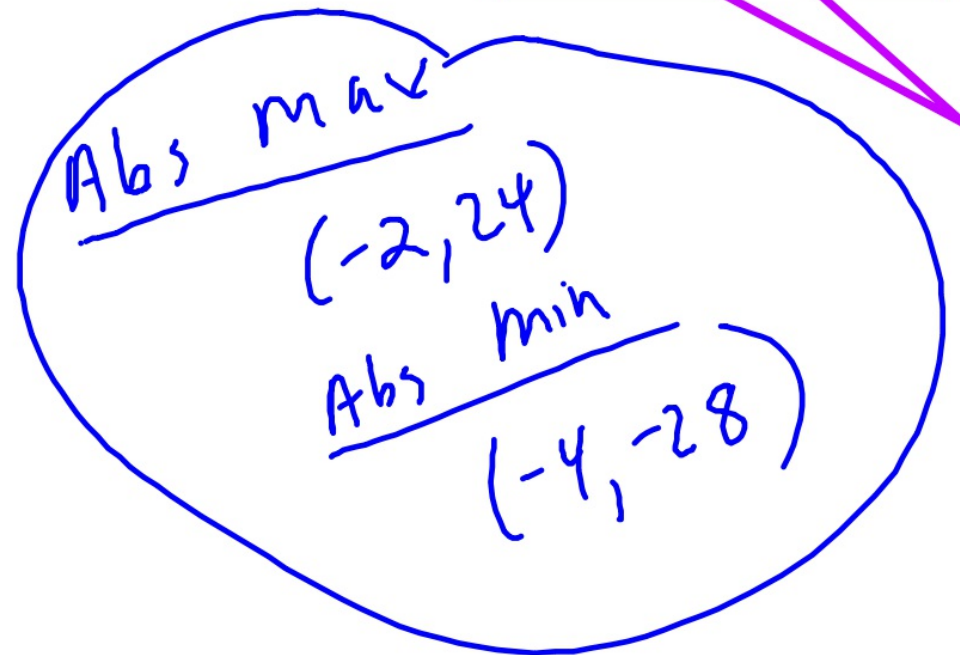
Find the coordinates of g 's absolute max and min
 $g(t) = 2t^3 + 3t^2 - 12t + 4$ on the interval $[-4, 2]$

same problem
that was on mcalc

C.N. $t = 1, t = -2$

C.N. $\begin{cases} g(1) = -3 \\ g(-2) = 24 \end{cases}$ big boy

E.P. $\begin{cases} g(-4) = -28 \\ g(2) = 8 \end{cases}$ small bean



What's on Wednesday's Test?

D-AD7: graph of f' , find max/min and intervals of inc/dec

D-AD8: Find absolute extrema, find relative extrema

D-AD9: Find intervals of increase/decrease

D-CD8: Mean Value Theorem

D-AD18: Linear Approximation

D-AD0: L'Hopital's Rule

D-AD5: Implicit Differentiation



Absolute Extrema hw
p. 167 #17-27 (odd), 52

Practice Test
check solutions after attempting

Assessing in class Wednesday