1. a) (8 pts) Let $f(x)=\sqrt{x^{4}-2 x^{2}+3}$ on $[-2,3]$. WeBWorK Day $28 \# 8$. Find the absolute max and min of $f$ and the points at which these occur. (You may assume the term in the square root is always positive.) Carefully simplify $f^{\prime}$. Show your work.

The absolute max value is $\qquad$ occurring at $x=$ $\qquad$ . The absolute min value is $\qquad$ occurring at $x=$ $\qquad$ .
b) What theorem did you use? $\qquad$
2. ( 6 pts ) From the next exam: Complete the statement of the Mean Value Theorem then draw and label diagram which illustrates it on the axes provided. Assume that $f$ is a $\qquad$ function on the interval _a, b_ and a $\qquad$ function on the $\qquad$ interval __ $a, b_{\_}$. Then there is a point $c$ in $(a, b)$ so that (fill in below)
$\qquad$ $=$ $\qquad$
a) (2 pts) Complete the definition. If $f$ is defined at $x=c$, then $c$ is a critical point of $f$ if:
3. Optional Bonus: Re-use some of the information in Problem 1 to determine the intervals where $f(x)=\sqrt{x^{4}-2 x^{2}+3}$ is increasing and where it is decreasing. Use a number line to summarize your results.

