**Sample Quiz**

1. Consider the function $f\left(x\right)=x^{4}-2x^{2}+1$. Determine and classify the local *extrema* and intervals where f is *increasing or decreasing*.
2. Consider the function $f\left(x\right)=x^{4}-6x^{2}$. Find the intervals of *concavity* and identify all *inflection* *points*, if any.



1. Sketch the function $f\left(x\right)=\frac{x^{2}}{x^{2}-4}$, including all asymptotes, extrema, inflection points, intervals of increase, decrease, concave up, and concave down 