## AP Calculus AB

Name $\qquad$

## Using derivatives to graph a function without a calculator \#1

$f(x)=x^{5}-5 x^{4}$
a. Find the x intercepts.
b. Find the y intercepts
c. Find any asymptotes (horizontal and vertical)
d. Find the end behavior.
e. Find the first derivative (get a common denominator).
f. Find the critical points. (hint: set numerator $=0$ and denominator $=0$ )
g. Use the critical points to find any max/mins. (hint: use a sign line)
h. State intervals of increase and decrease.
i. Find the second derivative (get a common denominator).
j. Find all possible points of inflection. (hint: numer $=0$ and denom $=0$ )
k. Find intervals of concavity. (hint: use a sign line)



