

(e) The second derivative of f is $f'' =$

(f) The point(s) of inflection are

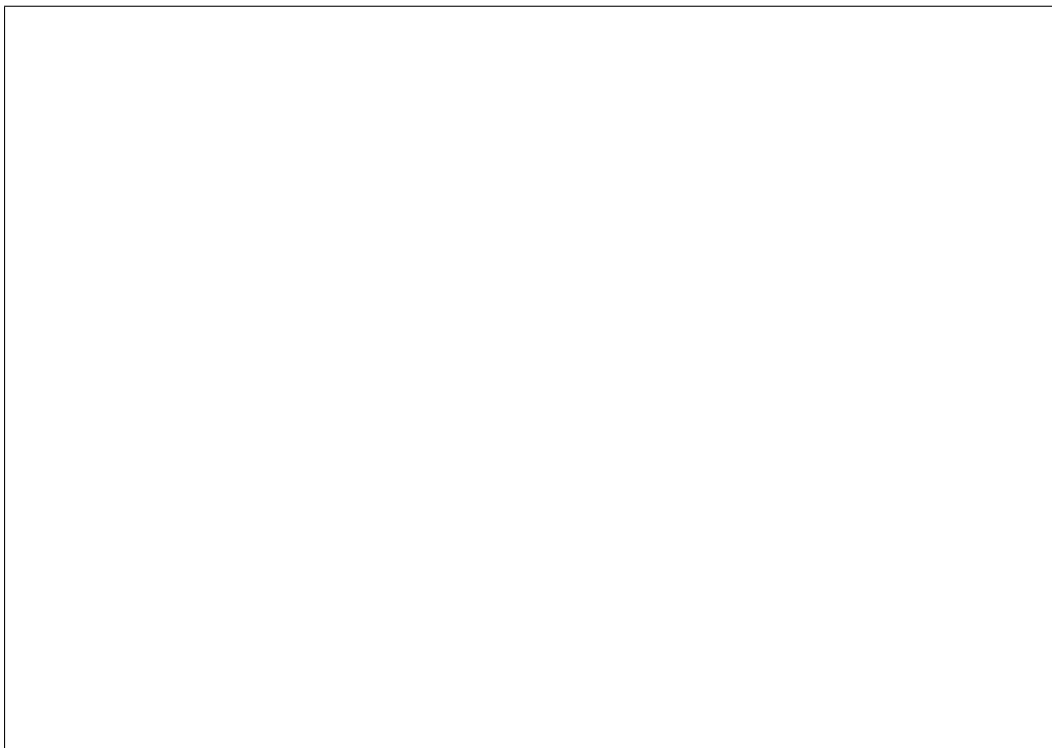
(g) Find $\lim_{x \rightarrow 0^+} f(x) =$, $\lim_{x \rightarrow 0^-} f(x) =$

(h) Find $\lim_{x \rightarrow -\infty} f(x) =$, $\lim_{x \rightarrow \infty} f(x) =$

(i) The equation(s) of the vertical asymptote(s)

(j) The equation(s) of horizontal asymptote(s)

(k) The graph of f is



QUESTION 2. Consider the function $f(x) = \frac{x}{2} + \cos(x)$. Follow these steps to graph the function over the interval $[0, \pi]$.

(a) The derivative of f is $f' =$

(b) The critical point(s) of f are

(c) The second derivative of f is $f'' =$

(d) The point(s) of inflection are

(e) Find $f(0) =$

, $f(\frac{\pi}{6}) =$

Find $f(\frac{\pi}{2}) =$

, $f(\frac{5\pi}{6}) =$

Find $f(\pi) =$

(f) The graph of f is

QUESTION 3. Find all local maximums and minimums (if any) and all inflection points of the function $f(x) = xe^{2011x}$.

Space for the last question.