Your name: _____

MTH 132-020 **Calculus I** **F18**

Quiz 7
Take-Home
due 10/29/18 at 10:20AM

In the exercises below use the following steps to sketch the graph of $y = f(x)$ for the given function f.

(A) Determine the domain of f.

(B) Compute the x- and y-intercept of $y = f(x)$.

(C) Determine the symmetry and the period of f, if any.

(D) Determine the horizontal and vertical asymptotes of $y = f(x)$. Compute $\lim_{x \to a^{\pm}} f(x)$ for any vertical asymptote $x = a$.

(E) Find all critical numbers of $f(x)$. Determine the maximal intervals where f is increasing and where f is decreasing.

(F) Determine the local maximum values and the local minimum values of f.

(G) Determine the maximal intervals where f is concave up and where f is concave down. Find all inflections points of $y = f(x)$.

(H) Use the information in Steps (A)-(G) to sketch the graph of $y = f(x)$.

1. $f(x) = \frac{x^3+1}{x^3-8}$.

2. $f(x) = x^{1/3}(x-4)$

3. $f(x) = \frac{\sin x}{2+\cos x}$