King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics

Math 101 (Term 162) - Quiz 5

Student Name_____ **Student ID:** _____

Exercise [10 points]

Let $f(x)=x^{\frac{1}{3}}(x-6)^{\frac{2}{3}}$; $f'(x)=\dfrac{x-2}{x^{\frac{2}{3}}(x-6)^{\frac{1}{3}}}$; $f''(x)=\dfrac{-8}{x^{\frac{5}{3}}(x-6)^{\frac{4}{3}}}$

Give a complete 5-step study of $f(x)$ and draw its graph.

(**1**) Domain **[1 point]**

(**2**) Limits and Asymptotes **[1 point]**

(**3**) Variation Table and critical Points **[3 points]**

x	
f'	
f	

Critical Points:

(**4**) Concavity Table and Inflection Points **[3 points]**

x	
f''	
f	

Inflection Points:

(**5**) Graph **[2 points]**