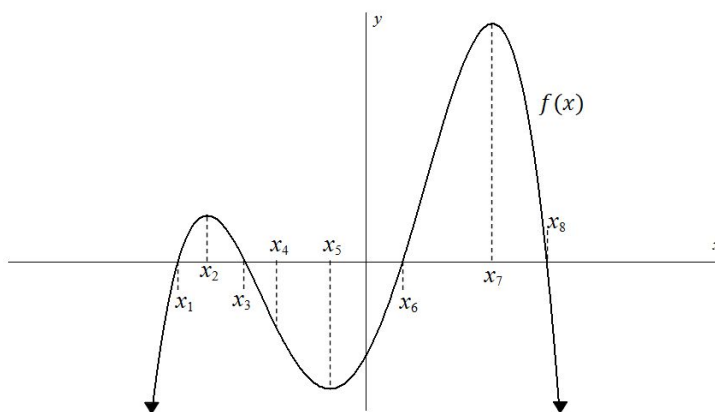


Name _____

Homework 3
Section 2.3

1. (8) Use the limit definition of the derivative to find $f'(x)$ for the function $f(x) = \frac{-8}{(x-4)^2}$. [**Hint:** leave the denominator in factored form throughout the limit.]

2. (6) Use the graph of $f(x)$ given below to answer the questions below.



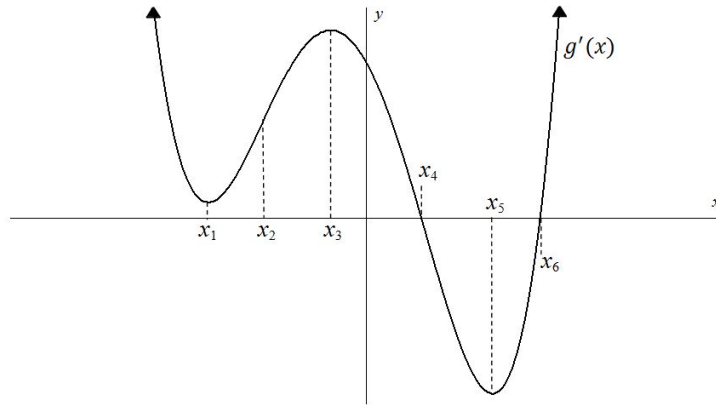
(a) On what interval(s) is $f'(x)$ positive?

(b) At which marked x -value(s) is $f'(x)$ greatest?

(c) At which marked x -value(s) is $f'(x)$ least?

(d) At which marked x -value(s) is $f'(x)$ zero?

3. (6) Use the graph of $g'(x)$ given below to answer the questions below.



(a) On what interval(s) is $g(x)$ increasing?

(b) At which marked x -value(s) is $g(x)$ greatest?

(c) At which marked x -value(s) is $g(x)$ decreasing the fastest?

(d) At which marked x -value(s) is $g(x)$ changing from decreasing to increasing?