

King Fahd University of Petroleum and Minerals
Department of Mathematics & Statistics
Math 101.14
Semester 102
Quiz (5)

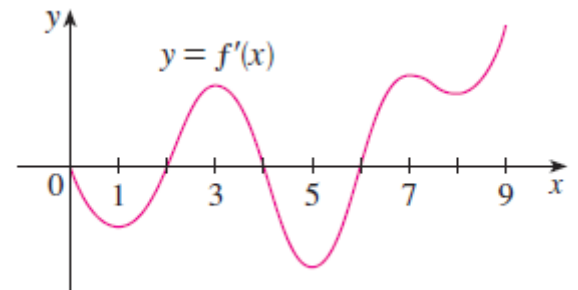
Name:

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1. Use the given graph of the first derivative f' to find:

- (a) On what interval is f increasing or decreasing.
- (b) At what values of x does f have a local maximum or minimum.
- (c) On what interval is f concave upward or downward.
- (d) What are the x -coordinates of the inflection points of f .



2. Evaluate:

$$\lim_{x \rightarrow \infty} (e^x + x)^{1/x}$$

3. For the function:

$$f(x) = \sqrt[3]{x^2 - 1}$$

- a) Find the intervals of increase and decrease.
- b) Find the local maximum and minimum values.
- c) Find the intervals of concavity and inflection points.
- d) Sketch the graph of f .

Good luck,
Khaled Al-Anezy