

Quiz 4C, Business Calculus

Fall 2012

Name: _____

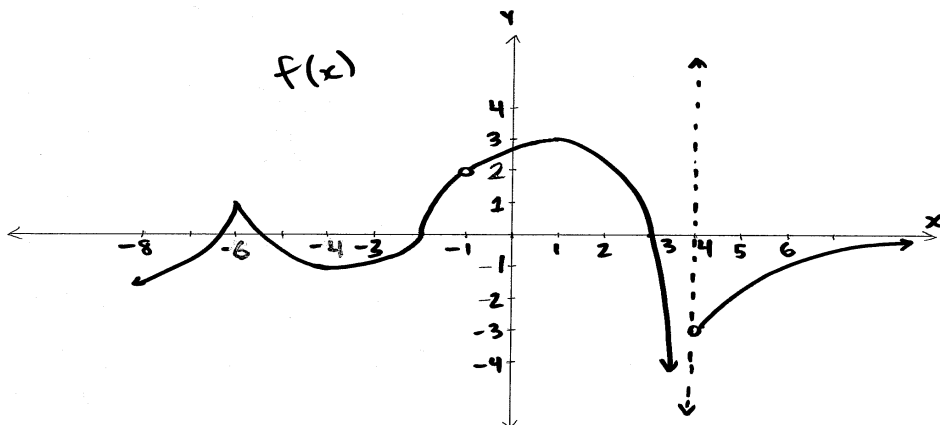
1. (4 points) Let $f(x) = -x^3 + 3x^2 + 24x - 10$. Find the following, and make sure to show your work.
 - (a) The relative minimum of f , if one exists. Write your answer as (x, y) coordinates.
 - (b) Find the interval where f is concave up.
 - (c) Find the inflection point(s) of f , if they exist.
 - (d) Find where f is increasing.

2. (4 points) The total cost incurred in operating a certain kind of truck, traveling at a speed of v mph, is estimated to be

$$C(v) = 125 + v + \frac{4500}{v}$$

where C is measured in dollars. Use differentials to estimate the change in total cost when the average speed is increased from 50 to 52 mph.

3. (2 points) Let the following graph represent $f(x)$. Answer the questions below.



- (a) $f(x)$ is decreasing on the interval(s):
- (b) $f(x)$ is concave down on the interval(s):
- (c) $f(x)$ has local maximum(s) at x -values of: