

Quiz #5-Make-Up
MATH 142

10 questions: 10 points

Name: _____

Seat # _____

Section 501, 507 or 508

1. Find the derivative and simplify completely: $f(x) = e^{3x} * (8x + 3)^4$

2. Given $f(x) = \frac{4x^3 - 56x^2 + 192x}{x}$

a. Find the critical points.

b. Find the partition points (values of x used on the number line to test where the function is increasing or decreasing).

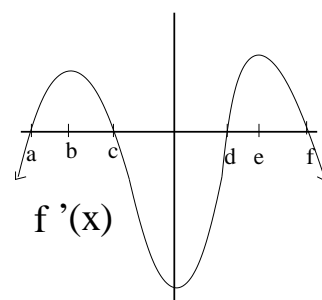
3. Find the derivative of $f(x)$ and simplify. $f(x) = \ln\left(\frac{5^{2x} * e^{2x+5}}{(2x+1)^3}\right)$

4. Given the graph of $f'(x)$ below,

a. Where does $f(x)$ have a relative minimum?

b. State the intervals over which $f(x)$ is concave up?

c. State the interval(s) over which $f(x)$ is increasing.



5. Given the cost function $C(x) = 42\sqrt{x} + 14x + 200$ where x represents the number of children's books printed, and $C(x)$ is measured in dollars.

a. Estimate the cost to print the 10th book.

b. Find the cost to produce four books.

c. Find the marginal average cost when the weekly production level is at 100 books.