

Math 151**Quiz 7**

Justify all answers with neat and organized work. Clearly indicate your answers.
10 points possible.

1. (5 pts.) Let $f(x) = 3x^2 - 12x + 5$. Find the absolute maximum and absolute minimum values of f on the interval $[-3, 4]$.

2. (5 pts.) Given:

$$f(x) = \text{some unknown continuous function, with domain the set of all real numbers}$$
$$f'(x) = \frac{2x^2 + 1}{\sqrt{x^2 + 1}}, \quad f''(x) = \frac{x(2x^2 + 3)}{(x^2 + 1)^{3/2}}$$

(a) Find the intervals on which f is increasing or decreasing.

(b) Find the intervals of concavity.