Quiz 6  
Math 180 Section 102

Workshop Section? Circle one:
Tuesday       Wednesday       Thursday       Friday in Math 104       Friday in Math 204

Answer the following questions. Work individually. No electronic devices or notes are permitted.

Consider \( f(x) = 6x + \frac{4}{x} \).

1. There are three numbers \( A < B < C \) that are either critical or not in the domain of the function. Find \( A \), \( B \), and \( C \).

2. For each of the following intervals, tell whether \( f'(x) \) is positive or negative.
   
   (a) \( (-\infty, A) \)
   
   (b) \( (A, B) \)
   
   (c) \( (B, C) \)
   
   (d) \( (C, \infty) \)

3. For each of \( A \), \( B \), and \( C \), describe the behaviour of the function (e.g., local maximum).
   
   (a) \( A \)
   
   (b) \( B \)
   
   (c) \( C \)
Consider \( f(x) = 6x^2 - 8x^4 \).

1. There are three numbers \( A < B < C \) that are either critical or not in the domain of the function. Find \( A \), \( B \), and \( C \).

2. For each of the following intervals, tell whether \( f'(x) \) is positive or negative.
   
   (a) \( (-\infty, A) \)
   (b) \( (A, B) \)
   (c) \( (B, C) \)
   (d) \( (C, \infty) \)

3. For each of \( A \), \( B \), and \( C \), describe the behaviour of the function (e.g., local maximum).
   
   (a) \( A \)
   (b) \( B \)
   (c) \( C \)
Consider \( f(x) = -4x - \frac{6}{x} \).

1. There are three numbers \( A < B < C \) that are either critical or not in the domain of the function. Find \( A \), \( B \), and \( C \).

2. For each of the following intervals, tell whether \( f'(x) \) is positive or negative.
   
   (a) \((-\infty, A)\)
   
   (b) \((A, B)\)
   
   (c) \((B, C)\)
   
   (d) \((C, \infty)\)

3. For each of \( A \), \( B \), and \( C \), describe the behaviour of the function (e.g., local maximum).
   
   (a) \( A \)
   
   (b) \( B \)
   
   (c) \( C \)