

- To use this as a practice quiz, you should have studied the problem banks in advance.
- Put away all material and set a timer for 10 minutes. (You will have 10 minutes for this quiz in class.)
- Go to your math mentors study hours to check your answers.

Practice Quiz: Critical Points, Fall 2017

Version: 2

Name (Print): _____ RIN: _____

Math Mentor Name: _____

Rules: Notes, calculators, cell phones and headphones are not allowed.

Honor Code Pledge: I did not violate any rules on this quiz and have no knowledge of any other student violating rules on this quiz. _____ (Signature)

Instructions: Put your final answer in the box shown. No partial credit will be given and nothing outside the box will be graded.

1. Find all critical points of $f(x) = (4x - 7)e^{6x}$, if any. Express your answer(s) in simplified form.

2. Find all the critical points of $f(x) = (x - 7)^2(3x + 1)$, if any. Express your answer(s) in simplified form.

3. Find all the critical points of $f(x) = \frac{1}{3}x^3 + \frac{3}{2}x^2 - 10x + \sin(\ln(2))$, if any. Express your answer(s) in simplified form.

4. Suppose the twice differentiable function has derivatives with signs as in the chart below. State the interval(s) on which f is concave down.

	$x < 1$	$1 < x < 5$	$5 < x < 9$	$9 < x$
$f'(x)$	-	-	-	+
$f''(x)$	-	+	+	+

5. Find all the positive critical points of $f(x) = 10x^2 + \frac{19}{x}$, if any. Express your answer(s) in simplified form.