Math-101 Semester-183 QUIZ II

Name: S.No. ID:

Maximum Marks: 7.5 Section: 14 Time Allowed: 25 minutes

(1) Given \( f(x) = \frac{3x^2 - 13x + 14}{x - 2} \). Find the the largest number \( \delta \) such that if \( 0 < |x - 3| < \delta \), then \( |f(x) - 2| < 0.33 \).

(2) Determine whether the function \( f(x) = \frac{\sqrt{2x+7} - \sqrt{x+7}}{3x} \) has a removable discontinuity, a jump discontinuity, or an infinite discontinuity at \( x = 0 \).

(3) Find the horizontal asymptotes of the graph of the function \( f(x) = \frac{\sqrt{5x^2 + 1}}{2x - 7} \).