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CSIS 213-3941

Exam 3 Part 2

**Question 3**

f (x) =  (1 - 7x) / x, for all real numbers x ≠ 0

Write a mathematical proof to determine whether f is one-to-one or not.

**Proof:**

Suppose f(x1) = f(x2) where x1 and xx are nonzero real numbers. By definition of f,

(1 - 7x1) / x1 = (1 - 7x2) / x2

Cross multiplying gives

x2 – 7x1x2 = x1 – 7x2x1

By adding 7x1x2 to both sides we get

x2 = x1

Thus, f is one-to-one.