KF

Math 101 (162)
Quiz 3 (3.9-4.4)

Name: ID #: Section: 18 Serial:

1. Each side of a square is increasing at a rate of 6 cm/s. At what rate is the area of the square increasing when the area of the square is 16 cm^2?

2. Find the critical numbers of
$$f(x) = \frac{x - \ln x}{x + 1}.$$

3. Find $\lim_{x\to\infty}\left(\sqrt{x^2 + 2x} - \sqrt{x^2 + x}\right)$.

4. Let
$$f''(x) = x^{-\frac{4}{3}}(6 - x)^{-\frac{5}{3}}.$$
Find the intervals of concavity of f.