

Math 2001 September 9, 2019
Read section 1.3 on Formal Limits.

Homework 10

1. Show that $\lim_{x \rightarrow 3} (4x - 7) = 5$
HINT: Do this like example 3 on page 71.

2. $f(x) = 2x - 2$ $L = -6$ $x_o = -2$ $\epsilon = 0.02$

Find an open interval about x_o on which the inequality $|f(x) - L| < \epsilon$ holds. Then, give a value for $\delta > 0$ such that for all x satisfying $0 < |x - x_o| < \delta$ the inequality $|f(x) - L| < \epsilon$ holds.

HINT: Do this just like example 5 on pages 71-72.

3. $f(x) = \sqrt{x}$ $L = 1/2$ $x_o = 1/4$ $\epsilon = 0.1$

Find an open interval about x_o on which the inequality $|f(x) - L| < \epsilon$ holds. Then, give a value for $\delta > 0$ such that for all x satisfying $0 < |x - x_o| < \delta$ the inequality $|f(x) - L| < \epsilon$ holds.

HINT: Do this just like example 5 on pages 71-72.

4. $f(x) = x^2$ $L = 3$ $x_o = \sqrt{3}$ $\epsilon = 0.1$

Find an open interval about x_o on which the inequality $|f(x) - L| < \epsilon$ holds. Then, give a value for $\delta > 0$ such that for all x satisfying $0 < |x - x_o| < \delta$ the inequality $|f(x) - L| < \epsilon$ holds.

HINT: Do this just like example 5 on pages 71-72.