

KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS
DEPARTMENT OF MATHEMATICS AND STATISTICS
MATH 101 - QUIZ 1

Name:

Student ID #:

Question1. Suppose that the inequalities

$$x^2 < f(x) - g(x) < 2h(x),$$

for values close to 2. If $\lim_{x \rightarrow 2} h(x) = 2$ and $\lim_{x \rightarrow 2} g(x) = -1$, then calculate $\lim_{x \rightarrow 2} f(x)$.

Question2. Evaluate the following limit.

$$\lim_{x \rightarrow 4} \frac{2 - \sqrt{x}}{\sqrt[3]{4 - x}}$$

Question3. Let $f(x) = 3 + 2x$, $x_0 = 3$. Then find a number $\delta > 0$ such that

$$0 < |x - x_0| < \delta \implies |f(x) - 9| < \epsilon$$

Your Solution.