

Quiz 5 will cover the following material:

All material covered in Classes 1-5

Problems #1-29 from Are You Ready For Calculus?

Inverse Functions (all)

The following Sample Quiz is intended to demonstrate the length of the quiz and the difficulty level of the questions. It is not intended as a comprehensive review or list of the type of questions that can appear on the quiz.

Sample Quiz 5

1. Find the inverse for the function $f(x) = \frac{2x - 3}{5x + 1}$

2. Find the domain for each of the following functions.

a) $f(x) = \sqrt{16x - x^2}$ b) $f(x) = \log_3(x^2 - 16x + 60)$ c) $\frac{4x - 7}{1 - \sqrt{x^2 - 8}}$

3. A small object is moving along a vertical line. Its location is given by the function $L(t) = -t^3 + 4t$ where t is measured in seconds, L is measured in meters. Find the average velocity of the object between $t_1 = 3$ s and $t_2 = 3.2$ s.

4. Compute each of the following limits.

a) $\lim_{x \rightarrow 5^-} \frac{\sqrt{x+4} - 3}{x-5}$

c) $\lim_{x \rightarrow \infty} \frac{x^3 - 2x + 5}{x^2 + 1}$

e) $\lim_{x \rightarrow 3} \frac{x^2 - 10x + 21}{x^2 - 9}$

b) $\lim_{x \rightarrow 0} \frac{(5+x)^2 - 25}{x}$

d) $\lim_{x \rightarrow 4^-} \frac{x-4}{|3x-12|}$

Answers

1. $f^{-1}(x) = \frac{x+3}{-5x+2}$

2. a) $[0, 16]$ b) $(-\infty, 6) \cup (10, \infty)$

c) $(-\infty, -2\sqrt{2}] \cup [2\sqrt{2}, \infty)$ and $x \neq \pm 3$ or $(-\infty, -3) \cup (-3, -2\sqrt{2}) \cup (2\sqrt{2}, 3) \cup (3, \infty)$

3. $-24.84 \frac{\text{m}}{\text{s}}$

4. a) $\frac{1}{6}$ b) 10 c) ∞ d) $-\frac{1}{3}$ e) $-\frac{2}{3}$

Last revised: January 30, 2019