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Test 1 – Fall 2015

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Q1 - Test 1 - Fall 2015

1. [12 points]

Let $f(x) = \frac{1}{\sqrt{9-x}}$

A) Find the domain and range of $f(x)$

B) Find the inverse function of $f(x)$

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Also view free tutorials for all major chapter 1 topics. Study Smart!

Q2 - Test 1 - Fall 2015

2. [8 points]

Solve each equation for x .

Hint: You need to express the solutions in terms of exponential and natural logarithm functions.

A) $e^{7-4x} = 6$

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Also view free tutorials for basic concepts (chapter 1)!

B) $\ln(x^2 - 1) = 3$

Q3 - Test 1 - Fall 2015

3. [12 points]

Evaluate the following limits:

A) $\lim_{x \rightarrow -1} \frac{\sqrt{x+10} - 3}{x+1}$

[Learn the major techniques for how to solve ANY limit question!](#)
[Chapter 2 tutorials at MATH1013.com](#)

B) $\lim_{x \rightarrow 0^+} \frac{1}{2^x - 1}$

Q4 - Test 1 - Fall 2015

4. [8 points]

Let c be a real number. Define the function

$$f(x) = \begin{cases} x - 1 & \text{if } x < 2 \\ x^2 + c & \text{if } x \geq 2 \end{cases}$$

Find the value of c such that $f(x)$ is a continuous function.