

Calculus 1000A — Fall 2015
Quiz 1

Date: Sept. 28, 2015
Duration: 25 minutes.

Name: _____
Section: 007

This is a multiple-choice test. Circle your answers clearly. Correct answers will earn you 5 points each. You can score a maximum of 20 points.

Problem 1. If we reflect the graph of $y = 3^x$ about the x -axis, and then shift it 3 units upwards, we obtain the graph of which of the following functions?

- (A) $y = 3^{x+3}$
- (B) $y = -3^{x+3}$
- (C) $y = 3 - 3^x$
- (D) $y = 3 + 3^{-x}$

Problem 2. Which of the following expressions is the same as

$$3e^{3(\ln(p)-\ln(q))}?$$

- (A) $e^{\frac{3p}{q}}$
- (B) $3\left(\frac{p}{q}\right)^3$
- (C) $\frac{\ln(p)}{\ln(q)}$
- (D) None of the above

Problem 3. Let

$$f(x) = \begin{cases} \ln(x), & x > 0 \\ \frac{x}{x+3}, & x \leq 0. \end{cases}$$

Which of the following statements is NOT true?

(A) $y = f(x)$ has a vertical asymptote at $x = 0$.

(B) $\lim_{x \rightarrow -3^-} f(x) = \infty$.

(C) $\lim_{x \rightarrow -3^+} f(x) = -\infty$.

(D) $\lim_{x \rightarrow 0} f(x)$ exists.

Problem 4. What is the following limit:

$$\lim_{x \rightarrow -2} \frac{2 - |x|}{2 + x}?$$

(A) 1.

(B) ∞ .

(C) Does not exist.

(D) 0.