# Feedback — Diagnostic Exam

You submitted this exam on **Sat 12 Jan 2013 11:51 AM EST**. You got a score of **8.00** out of **8.00**.

This is a diagnostic exam, to help you determine whether or not you have the prerequisites for the course, from algebra, geometry, pre-calculus, and basic calculus. Please solve the problems below. You may **not** use any calculators, books, or internet resources. Use paper and pencil/pen to determine your answer, then choose one item from the list of available responses. Do not collaborate with others please.

## Question 1

What is the derivative of $x^4 - 2x^3 + 3x^2 - 5x + 11$ ?

| Your Answer | | Score | Explanation |
|---|---|---|---|
| ◉ $4x^3 - 6x^2 + 6x - 5$ | ✓ | 1.00 | |
| Total | | 1.00 / 1.00 | |

## Question 2

Which of the following gives the equation of a circle of radius $2$ and center at the point $(-1, 2)$?

| Your Answer | | Score | Explanation |
|---|---|---|---|
| ◉ $(x+1)^2 + (y-2)^2 = 4$ | ✓ | 1.00 | |
| Total | | 1.00 / 1.00 | |

# Question 3

Simplify $\left(\frac{-125}{8}\right)^{2/3}$.

| Your Answer | | Score | Explanation |
|---|---|---|---|
| ◉ $\frac{25}{4}$ | ✓ | 1.00 | |
| Total | | 1.00 / 1.00 | |

# Question 4

Solve $e^{2-3x} = 125$ for $x$.

| Your Answer | | Score | Explanation |
|---|---|---|---|
| ◉ $\frac{2}{3} - \ln 5$ | ✓ | 1.00 | |
| Total | | 1.00 / 1.00 | |

# Question 5

Evaluate $\int_1^3 \frac{dx}{x^2}$.

| Your Answer | | Score | Explanation |
|---|---|---|---|
| ◉ $\frac{2}{3}$ | ✓ | 1.00 | |
| Total | | 1.00 / 1.00 | |

# Question 6

Let $f(x) = x + \sin 2x$. Find the derivative $f'(0)$.

| Your Answer | | Score | Explanation |
|---|---|---|---|
| ◉ $3$ | ✓ | 1.00 | |
| Total | | 1.00 / 1.00 | |

# Question 7

Evaluate $\cos \frac{2\pi}{3} - \arctan 1$. Be careful and look at all the options.

| Your Answer | | Score | Explanation |
|---|---|---|---|
| ◉ $-\frac{\pi + 2}{4}$ | ✓ | 1.00 | |
| Total | | 1.00 / 1.00 | |

# Question 8

Evaluate $\lim_{x \to 1} \frac{2x^2 + x - 3}{x^2 - x}$.

| Your Answer | | Score | Explanation |
|---|---|---|---|
| ◉ $5$ | ✓ | 1.00 | |
| Total | | 1.00 / 1.00 | |