College-Level Mathematics (CLM) Study Guide

The College-Level Mathematics test (CLM) assesses proficiencies in intermediate algebra through precalculus. **The CLM enables us to place students into intermediate algebra, college algebra, trigonometry or introductory calculus courses**. The **skills on the CLM** are listed below along with a few sample questions. We suggest you **review using an SAT or ACT prep guide** that can be found in a public library or purchased at a local bookstore. You need to be prepared to:

a) **Factor and expand polynomials, manipulate fractional exponent, and simplify algebraic expressions**
b) **Solve linear and quadratic equations and inequalities, other algebraic equations, and systems of equations.**
c) **Interpret graphs of algebraic functions**
d) **Apply algebraic topics to complex numbers, series and sequences, and factorials**
e) **Interpret graphs of trigonometric functions, solve trigonometric equations, and use trigonometric identifies and the unit circle to find trigonometric values.**

College-Level Mathematics Examples:

1) $|2x-5| \leq 7$
   a. $x = 6$
   b. $x = 6, x = -1$
   c. $x \geq 6, x \leq 1$
   d. $-1 \leq x \leq 6$

2) If $f(x) = x^4 - x + 2$, then $f(-x) =$
   a. $x^4 - x$
   b. $x^4 + x + 2$
   c. $x^4 - x + 2$
   d. $x^4 + x$

3) For what values of x is $x^2 - 3x - 18$ positive?
   a. $x < -3$ or $x > 6$
   b. $x > -3$ and $x < 6$
   c. $x > 6$ and $x > -3$
   d. $x > -3$

4) Given $f(x) = 2x + 3$, find $g(x)$ where $g(x)$ is the inverse of f.
   a. $g(x) = 2x - 3$
   b. $g(x) = \frac{-x + 3}{2}$
   c. $g(x) = \frac{x - 3}{2}$
   d. $g(x) = -\frac{x}{2} - 3$

5) The equation $x^2 + 2ix - 4 = 0$ has as its roots:
   a. $\sqrt{5}-i, -\sqrt{5}-i$
   b. $\sqrt{5}-i, \sqrt{5}+i$
   c. $\sqrt{3}-i, -\sqrt{5}+i$
   d. $\sqrt{3}-i, -\sqrt{3}-i$

6) In a triangle ABC, a=12, b=16, and $\sin B = \frac{2}{3}$,
   What is the measure of angle A in degrees?
   a. 90
   b. 15
   c. 60
   d. 30

These are just a few sample questions. Please use an SAT or ACT preparation guide and study the skills that are listed above if you wish to further prepare for the CLM.

Answers to Sample Questions:
1-d, 2-b, 3-a, 4-c, 5-d, 6-d