Level 3

College Level Math Placement Test

For placement into:

Math 100 - Survey of College Mathematics (Please refer to class schedule for other prerequisites.)
Math 110 - Elementary Statistics
Math 120 - Finite Mathematics
Math 130 - College Algebra
Math 150 - Trigonometry (Please refer to class schedule for other prerequisites.)
Math 160 - Precalculus (Trigonometry Supplemental Test may also be required.)

Mt. San Antonio College Mathematics Department wishes that you have a pleasant experience and success with your classes at Mt. SAC, in particular those offered by the Math Department.

The College Level Math Placement Test is intended to be taken by students who have completed 3 years of High School mathematics courses, including Algebra I, Plane Geometry, and Algebra II.

The material examined in this test is generally covered in the typical Intermediate Algebra course. The topic areas are:

| I. Sets, number systems, properties of real numbers, order of operations, absolute value, and algebraic expressions. | VII. Quadratic and higher order equations and inequalities (including graphing and rational inequalities). |
| II. Linear equations and inequalities. | VIII. Conic sections (including second-degree inequalities). |
| III. Operations on polynomials (including factoring). | IX. Linear and non-linear systems of equations (including Cramer's Rule). |
| IV. Rational expressions (including synthetic division and rational equations). | X. Exponential and logarithmic functions and equations. |
| V. Exponents and radical expressions (including rational exponents, radical equations, and complex numbers). | XI. Sequences and series (including the binomial theorem). |
| VI. Linear relations and functions (including graphing, distance formula, and variation). |

If you wish to consult a reference prior to taking the placement test, you might consult the current Math 61 and Math 71 textbooks, available at the bookstore for purchase, or any Plane Geometry and Intermediate Algebra textbooks.

The test is 45 minutes long and consists of 45 questions. Calculators are NOT permitted. Your score will be used to help determine your placement according to the following:

<table>
<thead>
<tr>
<th>Scores</th>
<th>Eligibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 20</td>
<td>You most likely will not be successful in Math 100, Math 110, Math 120, Math 130, Math 150 or Math 160. Please take the Intermediate Algebra Placement Test to determine appropriate placement.</td>
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<tr>
<td>21 - 45</td>
<td>Math 110, Math 120, Math 130. For Math 100 &amp; Math 150, please refer to class schedule for other prerequisites. For Math 160, the Trigonometry Supplemental Test may also be required.</td>
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</tbody>
</table>

A SAMPLE OF 11 QUESTIONS CAN BE FOUND ON THE BACK OF THIS PAGE
The following set of 11 questions is a sample, whose sole purpose is to inform you of the format and level of expertise required for the College Level Math Placement Test. This sample is much shorter than the test and does NOT represent all of the topics mentioned on the other side of this page. BEING ABLE TO CORRECTLY ANSWER THESE QUESTIONS DOES NOT NECESSARILY GUARANTEE SUCCESS ON THE TEST.

1. If $3 - |2x + 4| = -1$, then
   a. there is no solution
   b. $x = 4$ or $-4$
   c. $x = 0$
   d. $x = 0$ or $-4$

2. If $S = 2wh + 2wL + 2Lh$, then $h = ?$
   a. $S - 2wL$
   b. $2S - 2(w + 2L)$
   c. $S - 2wL - 2Lh - 2w$
   d. $S - 2wL / (2w + 2L)$

3. $x^2 - y^2 / x^{1+y^{-1}}$
   a. $1 / (x - y)$
   b. $y - x / xy$
   c. $1 / x + y$
   d. $x + y / (x^2 - y^2)$

4. $\left( \frac{1}{3x^5} \right) \left( 8x^{-3} \right)^{2/3} =$
   a. $\frac{3}{4}x^3$
   b. $-16x^{2/3}$
   c. $-12x^{11/3}$
   d. $\frac{3x^{2}}{4}$

5. If $2x^2 - x - 3 = 0$, then $x =$
   a. $\frac{3}{2}$
   b. $\frac{1 + 2\sqrt{6}}{4}$
   c. $\frac{3}{2}$ or $-1$
   d. $\frac{1 + 5i}{4} / -\frac{4}{4}$

6. If $f(x) = x^2 - 5x + 1$, then $f(b - 1) =$
   a. $b^2 - 7b + 7$
   b. $b^2 - 5b + 5$
   c. $b^2 + 3b - 3$
   d. $b^2 - 5b + 6$

7. The equation $x^2 - 8x - y^2 + 6y + 6 = 0$ is the equation of:
   a. a parabola
   b. a circle
   c. a hyperbola
   d. an ellipse

8. In the system of equations:
   $\begin{align*}
   3x - y &= 4 \\
   3x + 2y &= -5
   \end{align*}$
   a. $x = 3$
   b. $x = -3$
   c. $x = 1$
   d. $x = \frac{1}{3}$

9. If $\log(x) + \log(x + 3) = 1$, the solution is:
   a. $x = 2$
   b. $x = -5$
   c. $x = 2$ or $-5$
   d. $x = \frac{7}{2}$

10. What are the values of $x$ for which $(2x - 5)(x + 3) < 0$?
    a. $x < -3$ or $x > \frac{5}{2}$
    b. $-3 < x < \frac{5}{2}$
    c. $-3 < x < \frac{5}{2}$
    d. $x > -3$

11. The equation of the line through $(9, 8)$ and $(3, 6)$ is:
    a. $y = 3x - 3$
    b. $y = -\frac{1}{3}x + 11$
    c. $y = \frac{1}{3}x + 5$
    d. $y = \frac{1}{3}x - 1$

Online practice test is available at [http://www.mtsac.edu/assessment/testinfo.html](http://www.mtsac.edu/assessment/testinfo.html)