What is MATH 108?

MATH 108 is a college level algebra class designed to prepare students to succeed in higher-level math and science courses. The course is similar to the material in Math 101, the 1st college algebra course offered by the college; however, the level of understanding required is more rigorous and many additional topics are covered. Math 108 is a terminal math class in many programs & transfer programs, in which case this course should be prioritized; **discussion with your advisor is recommended when selecting your math course.**

I need MATH 108. Should I enroll in it directly or in a preliminary course?

So, you've learned that you need or want to take MATH 108. This is a brief assessment to help you decide if you should also take another class before taking your MATH 108 class.

- If you feel confident that you could correctly address 6 or more of these exercises, then you should enroll in MATH 108.
- If you feel less confident or think that you could only address 3, 4, or 5 exercises correctly, then consider enrolling in MATH 101 beforehand.
- If you feel more concerned or think that you could address fewer than 3 exercises correctly, then consider enrolling in in MATH 101 and MATH 101S.

1. Solve each equation.

    a. $3x - 11 = 5(10 - 2x)$

    b. $-\left(x - \frac{3}{4}\right)(x + 1.2) = 0$

    c. $\frac{2x}{5} = \frac{1}{10}(x - 1)$

    d. $\frac{1}{12}x - \frac{3}{8} = \frac{5}{24}x - (-1)$

2. Sketch the graph of $y = 2 - 2x$ on the coordinate plane, identify the slope, and the x and y intercepts.

3. Describe the following set using set builder notation and then describe it using interval notation.

$\left[\frac{-1}{2}, 5\right) \cap (-3.705, 3)$

4. Evaluate $f(x) = 3x^2 - 5$ at the following values.
   a. $x = y^2$
   b. $x = 3i$
   c. $x = 4^{1/4}$
   d. $x = \sqrt[3]{16}$

5.   Solve the inequality, graph the solution on the number line, and write the solution in interval notation. $-3x + 39 > 2.5$

6.   Perform the graphing exercises.
   a.   Find the equation of the line passing through the points $(-1,0)$ and $(-3, -4)$.
   b.   Write the equation of a line parallel to the one you've found.
   c.   Write the equation a line perpendicular to both lines from parts (a) and (b).

7.   Factor the following polynomials completely.
   a. $75 - 72p^2$
   b. $2a^3 - 8a^2b + 8ab^2$
   c. $24x^3 - 66x^2 + 15x$
   d. $x^3 - 16x - x^2y - 16y$

8.   Simplify the given expressions.
   a. $\left(\dfrac{(-1)^7 6a^{-3}b^4}{18a^{-4}b^5}\right)^{-2}$
   b. $\dfrac{2}{x^2+7x+12} + \dfrac{5}{x^2+8x+15}$
   c. $\dfrac{\frac{1}{y} + \frac{1}{x+y}}{1 + \frac{2}{x+y}}$

9.   Graph $f(x) = x^2 - 1$. Determine the domain, the range, and the roots of this function.

10. Find the value of x where

$\mu = 74$, $\sigma = 2.1$, $z = 3$, and $z = \frac{x - \mu}{\sigma}$.

11. Daigoro is taking an Algebra class where the course grade is determined by three exams of equal weight and a final exam of double weight. What is the minimum score he needs in order to earn a B grade (80%) for the course if his regular exam scores are 77, 84, and 81 ?