

The following is a general practice test for the algebra placement exam. This pre-test is not necessarily complete or comprehensive of all exam topics. Unlike this practice test, the placement exam is multiple-choice. Students are encouraged to work through these examples before consulting the solutions.

1. Solve for x : $\log_4\left(\frac{8}{x}\right) = 2$
2. Find $f^{-1}(x)$, the inverse function of $y = f(x) = 3x + 4$.
3. Solve the following equation for x . $\sqrt{x+14} - x = 2$.
4. Write the following complex number in the standard form $a + bi$. $\frac{6-i}{1+i}$
5. Solve the following equation for x , in the complex number system: $10x^2 + 6x + 1 = 0$
6. Let $z = 3 - 4i$. Find $z\bar{z}$, where \bar{z} refers to the complex conjugate of z .
7. If $y = f(x) = x^2 - 4x + 2$, find the cartesian coordinates of the vertex of the parabola defined by the graph of $f(x)$.
8. Find all real zeros of the following function: $f(x) = x^3 + 2x^2 - 5x - 6$ (all real solutions x to the equation $f(x) = 0$).
9. Solve the following equation for x . $5^{1+3x} = \frac{1}{5}$
10. Solve for x in the following equation. $\log_x(3) = \log_6(36)$