

Directions: Calculators are not allowed. Express any negative square roots in terms of i .

A2-1 1) Solve for x . $|3x - 2| = 10$ A2-1 2) Solve for x . $|5 - 2x| \leq 1$

A2-1 3) Find the solution set to the inequality $|\frac{3x-1}{4}| \geq 2$.

A2-1 4) Sketch the interval in the real number line that is the solution for $|x + 3| < 5$.

A2-2 5) Solve the system $\begin{cases} y = 2x - 1 \\ 4x - y = 7 \end{cases}$ for x only.

A2-2 6) Solve the system $\begin{cases} -3x - 2y = -14 \\ 2x - y = 7 \end{cases}$ for x only.

A2-2 7) Find the solution to the following system of equations: $\begin{cases} 2x + 3y - z = -4 \\ 3x - y + z = 7 \\ 4x + 6y - 2z = 4 \end{cases}$

A2-2 8) Solve the following system of equations for x only: $\begin{cases} 3x + z = 9 \\ 2y + 3z = 7 \\ x - 2y = 4 \end{cases}$

A2-2 9) Carnations cost \$6 a bunch, and daisies cost \$2 a bunch. If Luis buys 20 bunches of these flowers and spends \$52, how many bunches of carnations did Luis buy?

A2-2 10) Solve the following system graphically: $\begin{cases} 2x - 4y = 4 \\ y = -x + 2 \end{cases}$

A2-2 11) Solve the following system of inequalities: $\begin{cases} y \geq \frac{1}{3}x + 2 \\ y \geq -x + 3 \\ y \leq 3 \end{cases}$

A2-6 12) If $i = \sqrt{-1}$, find $6i(3i)$.

A2-6 13) What is the product of the complex number $(5 + i)$ and $(5 - i)$.

A2-5 14) If $i = \sqrt{-1}$, what is the value of i^{12} ?

A2-6 15) Find the sum: $(5 - 2i) + (1 + 10i)$

A2-6 16) Find the difference: $(2 + 6i) - (3 - 2i)$

A2-6 17) Simplify $\frac{3}{6+i}$. Express your answer as a single fraction.

- A2-6 18) Write $\frac{3+i}{5+2i}$ in the form of $a + bi$, where a and b are real numbers.
- A2-5 19) If $i = \sqrt{-1}$, graph the complex number $-3 + 2i$.
- A2-8 20) What are the solutions to the equation $x^2 + 2x + 5 = 0$?
- A2-8 21) What are the solutions to the equation $2x^2 - 5 = 45$?
- A2-8 22) What are the solutions to the equation $x^2 + 81 = 0$?
- A2-8 23) What are the solutions to the equation $x^2 = 6x$?
- A2-10 24) What are the x -intercepts of the graph of $y = 10x^2 + x - 3$?
- A2-10 25) What are the zeros of the function $f(x) = x^2 - 4x - 21$?
- A2-8 26) Find two numbers with the following properties.
1) The second number is 5 more than the first number.
2) The product of the two numbers is 1 less than their sum.
- A2-10 27) Determine the minimum value of the function $f(x) = 5(x+4)^2 - 2$.
- A2-10 28) What is the minimum point of $y = x^2 - 2x + 3$?
- A2-9 29) Find the vertex point of the graph $y = -2(x-4)^2 - 7$.
- A2-9 30) How does the value of "a" affect the thickness of the graph of $y = ax^2$ as compared to the graph of $y = x^2$?
- A2-9 31) Describe the translation of the graph of $y = (x+3)^2 + 2$ to the graph of $y = (x-2)^2 - 1$.
- A2-9 32) Which of the following sentences is true about the graphs of $y = 3(x+4)^2 - 1$ and $y = 8(x+4)^2 - 1$?
- A) Their vertices are minimums.
B) The graphs have the same shape with different vertices.
C) The graphs have different shapes with different vertices.
D) One graph has a vertex that is a maximum, while the other graph has a vertex that is a minimum.
- A2-9 33) The function $f(x) = (x-b)^2 + c$ is a parabola that opens upward with a minimum at the vertex point $(5, -2)$. Use this information to find the constants b and c .
- A2-10 34) Write the equation $y = 4x^2 - 16x - 1$ in the completed square form:
 $y = a(x-h)^2 + k$
- A2-10 35) Sketch a graph of $y = -4(x+3)^2 - 5$.