

- Solve the following using any method
 - $3x^2 + 18x = 81$
 - $15x^2 = x^4 - 16$
 - $x^2 + 44 = 15x$
 - $3x^2 - 12x + 4 = 0$
 - $4(w + 3)^2 - 81 = 0$
 - $x^3 + 12x^2 + 11x = 0$
 - $y^2 + 9 = -36$
- Solve the following and write the solution in interval notation.
 - $x^2 + x - 12 \geq 0$
 - $y^2 + 6y + 5 < 0$
- Write a quadratic equation in standard form for the parabola that pass through $(3, 20)$, $(-1, -4)$, $(-5, 4)$
- Write a quadratic equation for the parabola with vertex $(2, 3)$ and pass through $(4, 1)$.
- Graph the following. State the x and y intercepts, vertex, axis of symmetry and max or min.
 - $y + 6 = -3(x + 3)^2$
 - $y = \frac{1}{2}(x + 5)(x - 1)$
 - $y = x^2 - 12x + 46$
- Write the following in standard form
 - $(5 - 6i) - (3 - 2i)$
 - $(2 + 4i)(3 - 5i)$
 - $\frac{2 + i\sqrt{5}}{1 - i\sqrt{5}}$
- If a number is increased by its square, the result is 72. Find the number.
- An airline transports 800 people per week between two cities. A round trip ticket costs \$300. The company wants to increase the price. They estimate that for each \$5 increase, 10 passengers will be lost. What ticket price will maximize their income?
- The length of Hillcrest Garden is 6 feet more than its width. A 3-foot wide walkway surrounds the outside of the garden. The total area of the walkway is 288 square feet. Find the dimensions of the garden.
- George has 120 feet of fence to make a rectangular pin for his rabbits. If a shed is used as one side of the pen, what should be the length and width of the pen to give it a maximum area?