PROBLEMS AND SOLUTIONS - QUADRATIC EQUATIONS
Prepared by Ingrid Stewart, Ph.D., College of Southern Nevada
Please Send Questions and Comments to
ingrid.stewart@csn.edu. Thank you!

PLEASE NOTE THAT YOU CANNOT USE A CALCULATOR ON THE ACCUPLACER - ELEMENTARY ALGEBRA TEST! YOU MUST BE ABLE TO DO THE FOLLOWING PROBLEMS WITHOUT A CALCULATOR!

Problem 1:

Solve $15x^2 - 5x = 0$ using the *Factoring Method*. Find any real and imaginary solutions.

Problem 2:

Solve $x^2 + 5x = -6$ using the *Factoring Method*. Find any real and imaginary solutions.

Problem 3:

Solve $x^2 - 4x + 4 = 0$ using the *Factoring Method*. Find any real and imaginary solutions.

Problem 4:

Solve $x^2 - 16 = 0$ using the *Square Root Method*. Find any real and imaginary solutions.

Problem 5:

Solve $x^2 - 5 = 0$ using the *Square Root Method*. Find any real and imaginary solutions.

Problem 6:

Solve $(x - 2)^2 + 8 = 0$ using the *Square Root Method*. Find any real and imaginary solutions.

Problem 7:

Solve $x^2 - 10x + 20 = 0$ using the *Quadratic Formula Method*. Find any real and imaginary solutions.

Problem 8:

Solve $4x^2 - 8x + 11 = 0$ using the *Quadratic Formula Method*. Find any real and imaginary solutions.

Problem 9:

Solve $x^2 - 9 = 0$ using the *Quadratic Formula*, *Factoring*, and the *Square Root Method*. Find any real and imaginary solutions.

Problem 10:

If $3x^2 - 2x + 7 = 0$, then $\left(x - \frac{1}{3}\right)^2$ is equal to what number?

Problem 11:

The monthly profit, P, in thousands of dollars, of a company can be estimated by the formula $P = -3x^2 + 30x + 12$, where x is the number of units produced and sold per month. Find the profit when 5 units are sold in one month.

Problem 12:

A projectile is shot upward. It's distance s above the ground after t seconds is $s = -16t^2 + 400t$. Obviously, what goes up must come down! Calculate the time it takes for the projectile to return to the ground.

SOLUTIONS

You can find detailed solutions below the link for this problem set!

1. 0, $\frac{1}{3}$	2. -3, -2	3. 2
4. -4, 4	5. $-\sqrt{5}$, $\sqrt{5}$	6. $-2i\sqrt{2} + 2$, $2i\sqrt{2} + 2$
7. $5 - \sqrt{5}$, $5 + \sqrt{5}$	8. $\frac{2 + i\sqrt{7}}{2}$, $\frac{2 - i\sqrt{7}}{2}$	9. -3, 3
10. $-\frac{20}{9}$	11. $87,000	12. 25 seconds