

MATH SPEAK - TO BE UNDERSTOOD AND MEMORIZED

- 1) **QUADRATIC EQUATION** = an equation containing a quadratic expression that contains one kind of variable and can be written in the standard form (descending order of x): $ax^2 + bx + c = 0$.
 - 2) **ROOTS** = the solution to a *quadratic equation*. A root is a value of x that makes the quadratic expression equal to zero (0). *Roots* are also called *x-intercepts*.
 - 3) **QUADRATIC FUNCTION** = a quadratic relation whose quadratic expression is equal to a variable such as y or a function notation symbol: **i.e.** $y = ax^2 + bx + c$ or $F(x) = ax^2 + bx + c$.
 - 4) **ZERO** = the solution to a *quadratic function*. A *zero* is a value of x that makes the expression equal to zero (0). *Zeros* are also called *x-intercepts*.
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SOLVING QUADRATIC EQUATIONS AND FUNCTIONS

- 1) **SAMPLE PROBLEMS 1:** Study these examples carefully. Be sure you understand and memorize the process used to complete them.

- 1) Read the problem described in *INVESTIGATE the Math* on page 399 of your text.

1: Understand the problem.

The problem describes an arch in a wall. The shape of the arch is a parabola and is defined by this quadratic function [$h(w)$ = height in feet and w = width in feet]:

The question in the problem asks you to determine the maximum width of a 7.5 ft high crate that can pass through the arch.

- 2: **Use the quadratic function and the information given in the question to create a quadratic trinomial equation.**

- 3: **Try dividing each number in the quadratic trinomial equation by the leading coefficient. NOTICE how the leading coefficient divides nicely into each coefficient and the constant term.**

Continued on the next page.

4: *Solve the quadratic trinomial equation by factoring.*

5: *Answer the question in the problem.*

II) **REQUIRED PRACTICE 1:** Page 406-7: Solve these questions **IN THE ORDER GIVEN:** Questions 13, 14 & 8.
SHOW THE PROCESS!! {Ans. Page 574}
