

PROBLEM SET – Solving Quadratic Equations, Mr. Peralta, Class 622 and 623

Important Problems

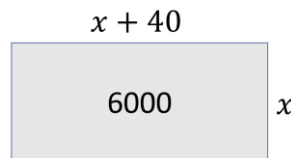
1. Find all solutions to each of the following equations:

- a. $x^2 + 10x + 25 = 0$
- b. $x^2 = 11x - 28$
- c. $56 - x^2 - x = 0$
- d. $x^2 - 7x = 0$
- e. $49 - x^2 = 0$

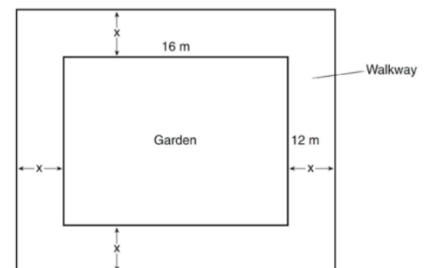
2. Find the values of x that make each equation true:

$-9x + 18 = -x^2$	$-6(x - 1) = 18$
$\frac{1}{3}x - 7 = -2$	$x^2 - 5x = 14$

3. A school is building a rectangular soccer field that has an area of 6000 square yards. The soccer field must be 40 yards longer than its width. Determine algebraically (in this case, this means use factoring) to determine the length and width of the field.



4. A rectangular garden measuring 12 meters by 16 meters is to have a walkway installed around it with a width of x meters, as shown in the diagram below. Together, the walkway and the garden have an area of 396 square meters.



Write an equation that can be used to find x , the width of the walkway.

Determine and state the width of the walkway.

Challenge Problem

- 1. Find all values of x such that $(x^2 + x - 6)(x^2 - 6x + 9) - 2(x^2 - 9) = 0$. Do not use a table.
- 2. For what values of x is $(x^2 + 5x - 24)(x^2 - 3x + 2) = (4x - 10)(x^2 + 5x - 24)$. Do not use a table.