

In-Class Problems 3 for Monday, January 29

These problems are from [Pre-Class Problems 3](#).

1. Solve the following equations using the quadratic formula.

a. $x^2 - 10x + 7 = 0$ b. $\frac{1}{2}y^2 + \frac{2}{3}y = \frac{3}{4}$

2. Determine the type of solutions for the quadratic equation $12 - 5y - 3y^2 = 0$ by calculating the discriminant.

3. Solve the following problems.

a. The length of a rectangular garden is twice the width. If the area of the garden is 500 square yards, then find the dimensions of the garden.

b. Find two consecutive integers whose sum of their squares is 145.

c. The base of a triangle is eight feet less than three times the height of the triangle. If the area of the triangle is 40 square feet, then find the base and height of the triangle.

4. Solve the following equations.

a. $4(t^2 + 9)(t^2 - 7) = 0$ b. $12y^3 - 20y^2 - 27y + 45 = 0$

c. $2w^5 = 128w^2$

5. Solve $\frac{3x}{x-4} - \frac{5}{x+6} = \frac{x^2 + 26x}{x^2 + 2x - 24}$