ALGEBRA DL-Zoom Meeting 2 - Solving Quadratic Equations

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Review the following information and then solve the quadratic equations.

Taking the Square Root
$$\sqrt{(x^2 = d)}$$

• Isolate x^2
• Take the square root of both sides of the equation (*remember: there are two roots + and -*)
Factoring $(x^2 + bx + c = 0)$
• Set the equation equal to zero by bringing all terms to one side
• Factor
• Set each factor equal to zero
• Solve each equation
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Quadratic Formula $ax^2 + bx + c = 0$
 $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

1.
$$x^2 = 121$$
 2. $4y^2 - 15 = 85$ 3. $a^2 + 7a + 12 = 0$

6. (y - 5)² = 49 4. $3x^2 - 24x = -45$ 5. y² + 6y = 0

7.
$$4(x-3)^2 = 32$$

8. $\frac{1}{x} = \frac{x}{4x+5}$
9. $(x+1)^2 = 81$

Review the following information and then solve each word problem.

Don't ∍ FORGET!	When solving word problems
	1) Read the problem twice, maybe three times. Think about what is being asked. Draw a diagram to help you make sense of the situation.
	2) Choose a variable or variables to represent the unknown(s).
	3) Write an equation relating all unknowns.
	4) Solve your equation and find all unknowns.
	5) Check your answer for reasonableness.

10. The length of a rectangle is 5 cm more than the width. The area is 84 cm². Find the length and width of the rectangle.

11. A square banner had 4 ft. added to its width and 2 ft. subtracted from its height. The banner then had an area of 91 ft². How long was a side of the original square banner?



12. The dimensions of a rectangular garden were 3 m by 10 m. When both dimensions were increased by the same amount, the area of the garden doubled. Find the dimensions of the new garden.

