Name _____ Date _____ Pd _____

11.2 Using the Discriminant & Solving Word Problems DAY TWO CYU

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Applying the discriminant	1 - 3	4 - 6	7 - 9
Determining the number & type of solutions	1 - 3	4 - 6	7 - 9
Sketching a visual	1 - 3	4 - 6	7 - 9
Solving quadratic word problems	10	11	12

Use the discriminant to determine the number and type of solutions of each equation. Then sketch a visual.

1. $x^2 - 5 = 0$

2. $x^2 - 7 = 0$

3. $4x^2 + 12x = -9$

4. $9x^2 + 1 = 6x$

5. $3x = -2x^2 + 7$

6. $3x^2 = 5 - 7x$

7. $6 = 4x - 5x^2$

8. $8x = 3 - 9x^2$

9. $5 - 4x + 12x^2 = 0$

Solve the word problems. Be sure to round to appropriate values and use correct units. Sketch a visual if one is not provided.

10. Nancy, Thelma, and John Varner live on a triangular corner lot. Often, neighborhood children cut across their lot to save walking distance. Approximate to the nearest foot how many feet of walking distance is saved by cutting across their property instead of walking around the lot. The hypotenuse is 36 feet through the grass while one side is 8 feet longer than the other side.

11. The hypotenuse of an isosceles right triangle is 2 centimeters longer than either of its legs. Find the exact length of each side. (HINT: An isosceles right triangle is a right triangle whose legs are the same length.)

12. A holding pen for cattle must be square and have a diagonal length of 100 meters.

a) Find the length of a side of the pen.

b) Find the area of the pen.

CYU Reflection: *How far can you go: basic, intermediate, or advanced?*
Rate your mastery level!
How confident are you with the skills this CYU covered? Circle the score you would give yourself.

| 1 2 | 3 4 5 | 6 7 | 8 |
| Basic | Intermediate | Advanced | Solved ALL! |