Algebra 1 Unit 9

Name: _____ Date: _____ Period: ____

# Solving Quadratic Equations by Factoring

Use your calculator for this exploration.

1. Graph each function listed in the table, and use the graph and/or table to find the zeros of the function. Record the zeroes and the number of zeros. Hint: Zeros means the same as x-intercepts, solutions, and roots. y=0

| Function | Zeros | Number of Zeros |
|---|---|---|
| $y=(x-2)(x+1)$ | 2, -1 | 2 |
| $y=(x+3)(x+7)$ | -3, -7 | 2 |
| $y=(x+6)(x-1)$ | -6, 1 | 2 |
| $y=(x-2.5)(x-5)$ | 2.5, 5 | 2 |
| $y=(x-4)^2$ | 4 | 1 |
| $y=(x+3)^2$ | -3 | 1 |

2. Predict the zeros of the function $y=(x-7)(x+10)$ without graphing. {7, -10}

3. Predict the zeros of the function $y=(x+8)^2$ without graphing. -8

4. **Explain** how you predicted the zeros of the function in problems 2 and 3.
find the value of x that makes the factor = 0 → opposite

5. Describe any patterns you notice in the table.
- 2 different factors = 2 zeros
- repeated factor = 1 zero
↑ solutions