

ACHS ENTERING ALGEBRA 2 SUMMER PROJECT

DUE DATE: September 10, 2019

Instructions:

- This project is composed of 3 parts, each of which will be graded.
- **PART A** consists of 16 quadratic functions to solve. Each section indicates the method to be used to solve. All work must be shown for full credit.
 - **Square Root Method:** <https://www.chilimath.com/lessons/intermediate-algebra/solving-quadratic-equations-square-root-method/>
 - **Factoring Method:** <https://www.chilimath.com/lessons/intermediate-algebra/solving-quadratic-equations-factoring-method/>
 - **Quadratic Formula Method:** <https://www.chilimath.com/lessons/intermediate-algebra/solving-quadratic-equations-quadratic-formula/>
 - **Completing the Square Method:** <https://www.chilimath.com/lessons/intermediate-algebra/solving-quadratic-equations-completing-square/>
- The answers are provided below for you to check to make sure you did it properly. This section will be graded on the process, not on the answer.

1) $a = \pm 8$	2) $k = \pm 6.481$	3) $x = \pm 4.472$	4) $a = \pm 10$
5) $x = 3, 5$	6) $x = 1, 7$	7) $p = -4, -8$	8) $x = -2, 0$
9) $a = -2.694, 1.361$	10) $b = -2.299, 0.924$	11) $n = -1.57, 3.82$	12) $n = -0.451, 1.551$
13) $v = 1, 11$	14) $a = -16.062, 0.062$	15) $n = -17, -1$	16) $x = -10.899, -1.101$

- **PART B** consists of a maze that must be solved. To complete the maze, find the correct answer after the problem. This will direct you to the next problem. Not all problems will be solved. Highlight the correct path and attach the work. You will be graded on the correct path and work.
- **PART C** is where you will create your own quadratic maze. This will be the main part of your grade.

REQUIREMENTS:

- Use the maze template provided. You will need to print this out twice.
- There are 7 empty boxes to put quadratic functions in that need to be solved. You must use at least 5 of them as the path to the answer which means these boxes need to have the correct solution as one of the paths.
- You may **NOT** put in any free boxes. All empty boxes must have a quadratic function in it.
- As in the maze you solved, you will need an arrow on the path leading from START to indicate which box to start with.
- Make sure the correct solution leaving a box leads to the next function needed to complete the maze like in the maze you solved.
- Fill the other paths with incorrect solutions.
- Copy your finished maze or use the second print out to copy all the information on it. This will be your answer key. On the maze, highlight the correct path to FINISH.
- On the back of the key, show all work for the correct solutions.
- Of the problems on the maze, at least one must be able to use each of the four methods listed above. Also, most of the problems must have coefficients of x^2 that are greater than one.

Name: _____

SHOW ALL WORK!

Solving Quadratic Equations Using Different Methods

Solve each equation by taking square roots.

1) $10a^2 - 10 = 630$

2) $3k^2 + 4 = 130$

3) $6x^2 + 1 = 121$

4) $-10 - 3a^2 = -310$

Solve each equation by factoring.

5) $x^2 - 8x + 15 = 0$

6) $x^2 - 8x + 7 = 0$

7) $p^2 + 12p + 32 = 0$

8) $x^2 + 2x = 0$

Solve each equation with the quadratic formula.

9) $6a^2 + 8a - 25 = -3$

10) $8b^2 + 11b - 11 = 6$

11) $4n^2 - 9n - 18 = 6$

12) $10n^2 - 11n - 15 = -8$

Solve each equation by completing the square.

13) $v^2 - 12v + 21 = 10$

14) $a^2 + 16a + 6 = 7$

15) $n^2 + 18n + 21 = 4$

16) $x^2 + 12x + 2 = -10$

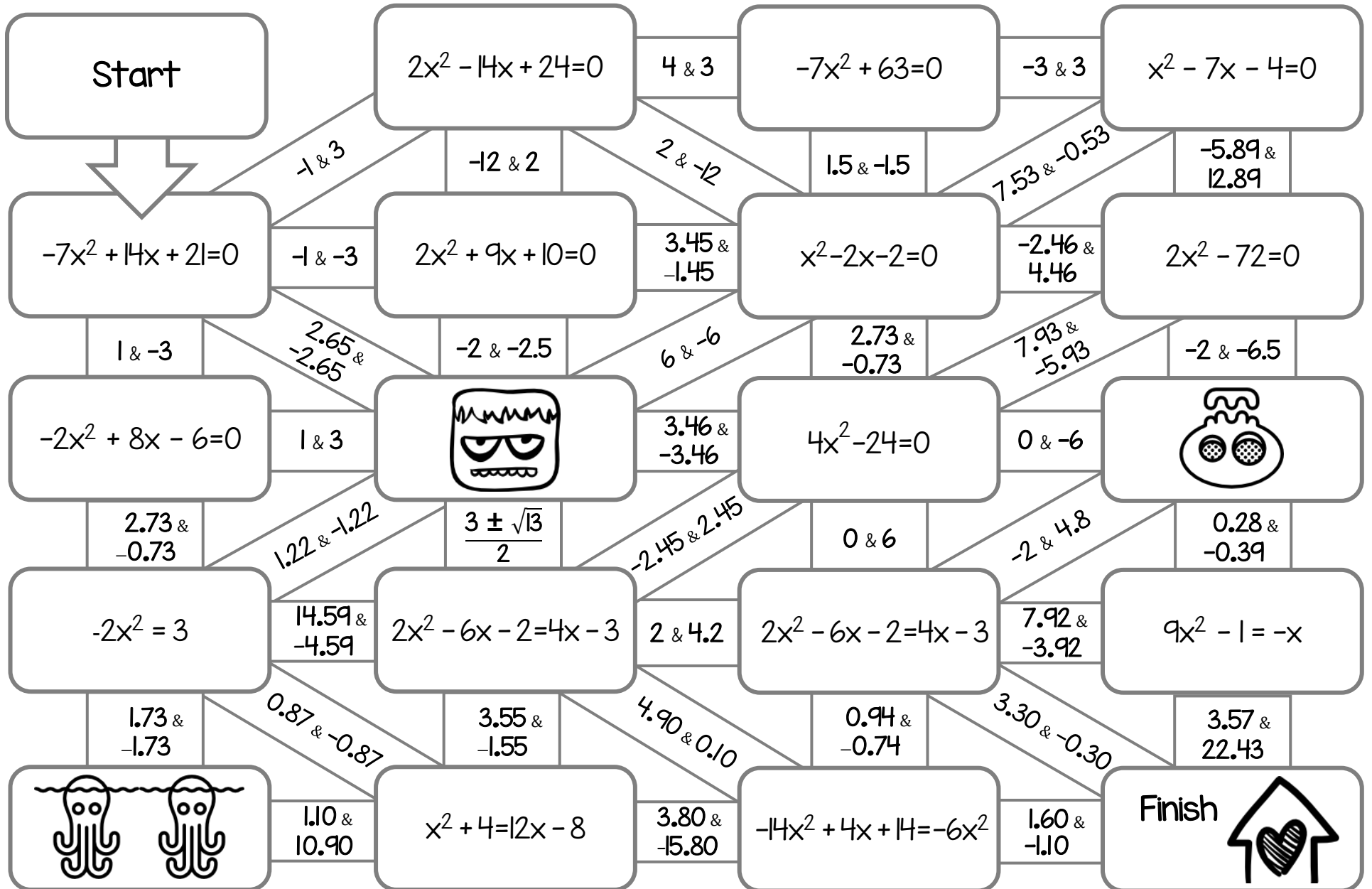
Quadratics Maze

Name: _____

Dodge the monsters. Make it home. Solve quadratics along the way to reveal the right path.

If a correct answer takes you to a monster, you made a wrong turn earlier on!

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Name: _____

MAZE TEMPLATE

