**Edwards & Lang Syllabus ☺ 2017-2018 ☺ Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ☺Block\_\_\_\_\_\_**

**IBMYP A2T Unit 2B: Quadratic Functions and Relations**

**HOMEWORK POLICY:** *In order to receive a 3, you must do the following (.5 off for each objective not completed):*

1. Write your name and date along with the assignment in the top margin. All of your work must be done in pencil or a black pen.
2. IXL work must be done on Loose-leaf for **at least** an 80% score. If you have to do any graphing, it must be done on graph paper.
3. Every problem must be attempted to the best of your ability. Use the internet (Khan Academy) if you have problems understanding.
4. All algebraic work must be shown, and it should be neat and organized (hint: circle or underline your answers).
5. All worksheets should be checked and fully corrected using a red pen before coming to class. Go to **cindyedwards.weebly.com.**
6. *Finally, assess your understanding by filling in the shaded section before coming to class.*

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| **DATE** | **DAILY LEARNING TARGETS & OBJECTIVES** | **INDEPENDENT PRACTICE (HOMEWORK)** | **GRADE** |
| Fri/Mon,Oct 20/23**Day 0** | **Test on Unit 2A** | IXLA1: EE.1 & EE.2, & H1– See #2 above!**Performance Task: Due by Day 03!** |  |
| L. Target? | Emoji  | What Questions do you still have?  | What were your AHA Moments? |
| Tue/Wed,Oct. 24/25***Day 01*** | Complex Numbers | IXL A2: H.2, H.4, H.5, & H.8 *Optional, but helpful: H.3* |  |
| L. Target? | Emoji  | What Questions do you still have?  | What were your AHA Moments? |
| Thu/Fri,Oct. 26/27***Day 02*** | Completing the Square Solving Quadratics Using the Square Root Property | IXL A2: H.6, J.4, & J.8*Optional, but helpful: J.7* |  |
| L. Target? | Emoji  | What Questions do you still have?  | What were your AHA Moments? |
| Mon/Tue,Oct. 30/31***Day 03*** | The Quadratic Formula and the Discriminant***Oct. 31: Happy Halloween!*** | IXL A2: J.9 & J.10 |  |
| L. Target? | Emoji  | What Questions do you still have?  | What were your AHA Moments? |
| Wed/Thu,Nov. 1/2***Day 04*** | Writing Quadratic Equations in Standard Form  | Writing Quadratic Functions Worksheet |  |
| L. Target? | Emoji  | What Questions do you still have?  | What were your AHA Moments? |
| Fri/Mon,Nov. 3/6***Day 05*** | Solving Linear-Nonlinear Systems Graphically & Algebraically***Mon., Nov. 6– Last day of 1st Quarter***  | Solving Linear-Nonlinear Systems HW WS***Tue., Nov. 7 – Staff Day = No school 4 U!***  |  |
| L. Target? | Emoji  | What Questions do you still have?  | What were your AHA Moments? |
| Wed/Thu,Nov. 8/9***Day 06*** | Unit 2B Test Review***Wed., Nov. 8 – First day of the 2nd Quarter******Friday, Nov. 10 is Veteran’s Day – No School!*** | Unit 2B Test Review Worksheet |  |
| L. Target? | Emoji  | What Questions do you still have?  | What were your AHA Moments? |
| Mon/Tue,Nov. 13/14***Day 07*** | **Test on Unit 2B: Quadratic Functions and Relations****Wednesday, Nov. 15 –CAV CONN & Report Cards**  | **TOTAL POINTS:** |  |
| L. Target? | Emoji  | What Questions do you still have?  | What were your AHA Moments? |

**LEARNING TARGETS:**

**Target 5** : I CAN **simplify** an expression containing complex numbers and or radicals.

**Target 6:** I CAN **solve** a quadratic equation over the set of complex numbers using the most efficient method

 (factoring, square roots /completing the square or the quadratic formula).

**Target 7:** I CAN **write** a quadratic equation in any form given a combination of its parts.

**Target 8:** I CAN **solve** non-linear systems of equations algebraically and graphically.

**BIG IDEAS/ENDURING UNDERSTANDINGS**

1. Function model real life relationships and enable predictions to be made.
2. The parameters of a function relate to the transformation of the graph
3. The solutions of a quadratic equation are the zeros/roots of its related function.

**ESSENTIAL QUESTIONS: Be ready to do an essay on any of these questions on the test day!**

1. How do the parameters of a function determine the shape of its graph?
2. How do you tell which method to solve quadratic equations is **BEST**?
3. Why is it important to learn a variety of methods for solving quadratic equations?
4. What are the zeros of a quadratic function and how can you tell what kind you have?
5. Describe what the discriminant can tell you about a quadratic function.

**SOL OBJECTIVES (2009):**

**AII/T.1d** The student, given rational, radical, or polynomial expressions, will

 d)factor polynomials completely**.**

**AII/T.3** The student will perform operations on complex numbers, express the results in simplest for using patterns of the powers of *I,* and identify field properties that are valid for the complex numbers.

**AII/T.4b** The student will solve, algebraically and graphically quadratic equations over the set of complex numbers. Graphing calculators will be used for solving and for confirming the algebraic solutions.

**AII/T.5** The student will solve nonlinear systems of equations, including linear-quadratic and

quadratic- quadratic, algebraically and graphically. Graphing calculators will be used as a tool to visualize graphs and predict the number of solutions.

**AII/T.6** The student will recognize the general shape of function (absolute value square root, cube root, rational polynomial, exponential, and logarithmic) families and will convert between graphic and symbolic forms of functions. A transformational approach to graphing will be employed. Graphing calculators will be used to investigate the shapes and behaviors of these functions.

**AII/T.7 a-d** The student will investigate and analyze functions algebraically and graphically. Key concepts include

 a) domain and range, including limited and discontinuous domains and ranges;

 b) zeros;

 c) x- and y-intercepts;

 d) intervals in which a function is increasing or decreasing.

**PRESKILLS FOR THIS UNIT:**

* Factor a quadratic polynomial completely using factoring patterns learned in 2A: GCF, difference of squares, trinomial squares
* Simplify radical expressions
* Add, subtract, multiply, and divide radicals
* Rationalize the denominator of a radical expression
* Solve a quadratic equation using the quadratic formula
* Graph a line in any form without a calculator
* Graph a quadratic function in any form without a calculator