Edwards & Stroud Syllabus ☺ 2019-2020 ☺ Name_____ ☺Block_____

IBMYP A2T Unit 2A: Quadratic Functions and Relations

HOMEWORK POLICY: *In order to receive a 3, you must do the following (.5 off for each incomplete objective):*

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) Copy each problem. 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. Google the concept 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 assignments should be checked and fully corrected using a red pen before coming to class. Go to **cindyedwards.weebly.com.**
6) *Finally, go to the Unit 2A Padlet and write down any questions/Aha moments when they come to your mind.*

DATE	DAILY LEARNING TARGETS & OBJECTIVES	INDEPENDENT PRACTICE (HOMEWORK)	GRADE
Wed/Thu, Sept. 25/26 **Day 00**	**Test on Unit 1** What's The Function Introduction ***THU, SEPTEMBER 26 - PTSA OPEN HOUSE!***	Introduction of Unit 2 Worksheet ***Performance Task due next block***	_ 3
Fri/Mon, Sept. 27/30 **Day 01**	Interpreting Graphs: The Flagpole Problem Relations, Functions, Domain and Range	Day 01 Domain and Range Part I **Start Memorizing the Function Family D & R!**	_ 3
Tue/Wed, Oct. 1/2 **Day 02**	Domain and Range Review Transformation of Functions ***Quiz next block on the Function Family Members/ D & R*** ***CAV CONNECTION OCTOBER 2 – Adjusted Schedule***	Day 02 Domain and Range Part II Desmos Activity – Link on my website	_ 3
Thu/Fri, Oct. 3/4 **Day 03**	Modeling Real World Data with Quadratics (Max/Min)	Day 03 Quadratic Applications	_ 3
Mon/Tue, Oct. 7/8 **Day 04**	Graphing Quadratic Functions in Vertex Form	Day 04 Graphing Quadratics in Vertex Form	_ 3
Wed/Thu, Oct. 9/10 **Day 05**	Graphing Quadratic Functions (Equivalent Forms) ***Factoring Practice – HONE IN ON YOUR SKILLS!*** ***OCTOBER 9 - PROGRESS REPORTS Issued***	Day 05 Graphing Quadratic Functions Math Space Factoring	_ 3
Fri/Tue, Oct. 11/15 **Day 06**	Solving Quadratic Equations by Graphing & Factoring ***MON, OCTOBER 14 – VIRTUAL LEARNING & STAFF DAY***	Day 06 Solving Quadratic Equations by Graphing & Factoring	_ 3
Wed/Thu, Oct. 16/17 **Day 07**	Writing Equations of Quadratic Functions ***WED, OCTOBER 16 – PSAT DAY – Adjusted Schedule***	Day 07 What's My Function Investigation	_ 3
Fri/Mon, Oct. 18/21 **Day 08**	**Review Unit 2A**	Day 08 Unit 2A Test Review Worksheet	_ 3
Tue/Wed, Oct. 22/23 **Day 09**	**Test on Unit 2A**	**TOTAL POINTS:** Review Radicals Worksheet	___ 27

LEARNING TARGETS:

Target 1: I CAN state the domain and range of any relation or function in set builder and interval notation.
Target 2: I CAN graph a quadratic function, and state all of its parts (vertex, roots/zeros, intercepts, axis of symmetry, domain and range) in any form (standard, vertex, intercept) without a graphing calculator and can write an equation in all 3 form when given its parts.
Target 3: I CAN apply knowledge of quadratics in real-life contexts (using the graphing calculator AND Desmos).
Target 4: I CAN factor quadratic expressions and solve a quadratic equation over the set of real numbers by factoring.

The IB Learner Profile for Unit 2A is:
Be an Inquirer
What does that look like?
Catch a classmate being an inquirer and put his/her name in the jar!

GUIDING QUESTION/GLOBAL CONTEXT: PERSONAL & CULTURAL EXPRESSION:

Many real-life patterns have a parabolic form, which can be represented and explored using a quadratic model.
How can we maximize or minimize any situation? For example, how can we control the mosquito population?

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

1. **Factual:** What do the zeros/roots of a quadratic function represent on the graph?
2. **Conceptual:** How can the discriminant be used to explore the characteristics of a quadratic model?
3. **Debatable:** Is it appropriate to use more than one quadratic form of the same function to explore a real-life problem and/or situation?

BIG IDEAS/ENDURING UNDERSTANDINGS (MATH LAWS WE LIVE BY):

1. Function models of real life relationships enable predictions to be made.
2. The parameters of a function relate to the transformation of the graph.
3. Quadratic patterns model relationships where a maximum or minimum value occurs.
4. The solutions of a quadratic/polynomial equation are the zeros/roots of its related function.

ESSENTIAL QUESTIONS:

1. Why is it important to learn a variety of methods for solving quadratic equations? How do you know which is best?
2. What real life situations model a quadratic function?
3. What can factoring tell you about a quadratic expression, equation, or function?

SOL OBJECTIVES (2009):

AII/T.1d The student, given rational, radical, or polynomial expressions, will
d) factor polynomials completely.

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.