


# A2T Unit 5 – Inverse, Radical Functions & Relations

**HOMEWORK POLICY:** In order to receive a 3, you must follow the procedure listed on all previous syllabi!

This unit requires practice and more practice! In order to guarantee your success, I suggest that you do the Mathspace assignments in the areas where YOU need more practice. YOU are in charge of your grades! The homework grade is a reflection of the assigned worksheets, which are important for your overall understanding.

**Please post any questions or AHA moments throughout this unit to the UNIT 5 PADLET on my website.**

DATE	DAILY LEARNING TARGETS & OBJECTIVES	INDEPENDENT PRACTICE (HOMEWORK)	GRADE
Tue/Wed, Jan. 21/22	Test on Unit 4	<i>Gas Consumption Problem due on or before Wed/Thu, Jan. 23/24</i>	X
Thu/Fri, Jan. 23/24 <b>Day 00</b>	<b>CITYWIDE ALGEBRA 2 MID-ASSESSMENT</b> <b>Fri. Jan 24 – Last day of the 2<sup>nd</sup> Quarter</b> <b>Mon. Jan. 27 – NO SCHOOL: Teacher workday</b>	Day 00 Introduction to Composite Functions	– 3
Tue/Wed, Jan. 28/29 <b>Day 01</b>	Operations with Functions <b>Introduce PBL Task: “Which is the Best Deal?”</b> <b>– IB Rubric B &amp; D: Due at the end of the unit!</b>	Day 01 Functions I & II	– 3
Thu/Fri, Jan. 30/31 <b>Day 02</b>	Graphing Square Root Functions Rational Exponents	Day 02 Graphing Square Root Functions <b>– No calculator!</b> Day 02 Introduction to Inverse Functions	– 3
Mon/Tue, Feb. 3/4 <b>Day 03</b>	Inverse Functions and Relations (Walkabout) <b>Assign Valentine’s Day Card RAFT</b> (25 point Minor Assessment due by Feb 8/11)	Day 03 Inverse Functions and Relations <b>Make a Power Card if you haven’t already</b>	– 3
Wed/Thu, Feb. 5/6 <b>Day 04</b>	nth Roots <b>Cav Connection Tue., Feb. 5 – Abbr. Schedule</b>	Day 04 Radicals & Rational Exponents Practice	– 3
Fri/Mon, Feb. 7/10 <b>Day 05</b>	Operations with Radical Expressions	Day 05 Operations with Radical Expressions	– 3
Tue/Wed, Feb. 11/12 <b>Day 06</b>	Solving Radical Equations <b>Tuesday, Feb. 11: Report Cards Issued</b>	Day 06 Solving Radical Equations Worksheet	– 3
Thu/Fri, Feb. 13/14 <b>Day 07</b>	Review Unit 5 <b>Valentine’s Day Speed Dating</b> <b>Monday, Feb. 17: NO SCHOOL – President’s Day</b>	Day 07 Unit 5 Test Review Worksheet	– 3
Tue/Wed, Feb. 18/19 <b>Day 08</b>	Test on Unit 5 	<b>TOTAL POINTS</b>	<hr/> 24

## Unit 5 Learning Targets:

Are you on Target?



**Target 1:** I CAN apply operations with functions, evaluate compositions of functions, verify inverses using composition of functions, and apply composition of functions to real world applications.

**Target 2:** I CAN graph a function, including square root functions, and its inverse and identify the domain and range of each; I can find the equation of the inverse of a function.

**Target 3:** I CAN simplify expressions containing rational exponents and radicals of a variety of indices.

**Target 4:** I CAN solve equations containing rational exponents or radicals.



## GUIDING QUESTION/GLOBAL CONTEXT: IDENTITIES & RELATIONSHIPS

Does every action have an inverse action?

### GUIDING IDEA:

“The essence of mathematics is not to make simple things complicated, but to make complicated things simple.”

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### UNIT 5 ENDURING UNDERSTANDINGS/BIG IDEAS

1. The domain of the inverse is the range of its original relation!
2. An exponent is the number of times you must multiply its base by itself!

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### UNIT 5 ESSENTIAL QUESTIONS:

1. What is an inverse? What is an identity? How are they related? Why are these definitions so important in THIS unit?
2. Explain why a person would perform a composition of functions. Include a real-world example that you could solve by using a composition of functions.

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### SOL Objectives (2009):

- All.1 The student will
- b) add, subtract, multiply, divide, and simplify radical expressions containing rational numbers and variables, and expressions containing rational exponents; and
- All.3 The student will solve
- c) equations containing rational algebraic expressions; and
  - d) equations containing radical expressions.
- All.6 For absolute value, square root, cube root, rational, polynomial, exponential, and logarithmic functions, the student will
- a) recognize the general shape of function families; and
  - b) use knowledge of transformations to convert between equations and the corresponding graphs of functions.
- All.7 The student will investigate and analyze linear, quadratic, absolute value, square root, cube root, rational, polynomial, exponential, and logarithmic function families algebraically and graphically. Key concepts include
- a) domain, range, and continuity;
  - b) intervals in which a function is increasing or decreasing;
  - c) extrema;
  - d) zeros;
  - e) intercepts;
  - f) values of a function for elements in its domain;
  - g) connections between and among multiple representations of functions using verbal descriptions, tables, equations, and graphs;
  - h) end behavior;
  - i) vertical and horizontal asymptotes;
  - j) inverse of a function; and
  - k) composition of functions algebraically and graphically.

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### PREREQUISITE TARGETS

- I CAN simplify a radical and rationalize a denominator
- I CAN graph and translate any of the 10 function family members
- I CAN solve a formula for a variable
- I CAN define and apply the definitions of a relation, function, input, output, domain, range, interval notation, inverse, identity, THE IDENTITY FUNCTION, and use function notation when appropriate.