Algebra 1
Syllabus and Assessment Tests

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Algebra 1 Course Syllabus

For Students Enrolled in Oak Meadow School

Materials List

- *Algebra 1* by Elayn Martin-Gay (Pearson, 2016)
- MyMathLab (online resource)
- Oak Meadow Assessment Tests

Course Organization

This course is arranged into 10 units. Your Algebra 1 textbook is organized into 10 chapters that correspond to these 10 units. In addition, there is 1 optional bonus unit. The length of each chapter varies, and the suggested time to be spent on each unit is shown here and included in the syllabus below. Following this suggested schedule will allow you to successfully complete the course within your 10-month enrollment period.

Unit	Topics	Weeks
1	Review of Real Numbers	2
2	Solving Equations and Problem Solving	4
3	Graphs and Functions	4
4	Solving Inequalities and Absolute Value Equations and Inequalities	3–4
5	Solving Systems of Linear Equations and Inequalities	4
6	Exponents and Polynomials	4
7	Factoring Polynomials	4
8	Rational Expressions	4
9	Roots, Radicals, and Trigonometric Ratios	3
10	Quadratic Equations	3

This syllabus includes regular submission points in the schedule that will allow you to get consistent and timely learning support from your Oak Meadow teacher. These submission checkpoints occur roughly every two weeks: one halfway through each chapter, when you will submit the integrated review assignment, and the second at the end of each chapter, when you submit the chapter test as well as the Oak Meadow Assessment Test.

You are welcome to check in with your teacher more frequently, if needed. If you are unable to maintain this schedule, please discuss it with your teacher. Regular communication with your teacher is essential for a successful learning experience!

There are four main types of assignments. Exercise sets, integrated reviews, and chapter tests are all found in the textbook. Oak Meadow Assessment Tests are found in this syllabus.

Exercise sets help you develop necessary skills. You are encouraged to work on them daily and check your answers in the textbook answer key. **It is essential that you review and correct any problems you answered incorrectly before moving forward in the lesson.** If, after self-correction, you are still unsure of how to complete a problem, please reach out to your teacher for more guidance.

Integrated reviews are found midway through each chapter. These reviews provide a good opportunity to solidify your skills. Complete the required problems, check your answers, and make any necessary corrections. Let your teacher know if you have any questions about the material.

Chapter tests are found at the end of each chapter. After completing a chapter test, you or your home teacher should grade it and mark the score at the top (such as 18/20). Then, review any mistakes and make necessary corrections before taking the Oak Meadow Assessment Test.

Oak Meadow Assessment Tests, included in this syllabus, will be graded by your Oak Meadow teacher. Your final grade in the course will be primarily based on the average of your assessment test scores.

Submitting Work to Your Teacher

The following work will be submitted to your teacher:

❏ **Exercise Sets** (with answers checked and corrections noted)

❏ **Integrated Reviews** (with answers checked and corrections noted)

❏ **Chapter Tests** (with answers checked, a score marked at the top, and corrections noted)

❏ **Oak Meadow Assessment Tests**

It is important that you always show your work and/or explain your thinking, wherever relevant, so your teacher can see where you are having difficulty and better support your learning. In order to be considered complete, math assignments need to include handwritten computations showing how you arrived at your final answer.

Course Assignments and Requirements

- Please begin by reading the preface in your textbook. This will provide you with information about the resources available to you in this course (including the online resource MyMathLab) and how your textbook is organized.

- You do not have to do every problem in the textbook—a list of assignments is included in the chart starting on the next page. Check off assignments as you complete them.

- The exercise sets listed are suggestions. More or fewer problems can be done as needed. The textbook answer key only includes answers to odd-numbered problems in the exercise sets. You can do even-numbered problems for extra practice, but you will not be able to check your answer.

- Primarily odd-numbered problems are assigned. Note that many assignments suggest completing every other odd (abbreviated "EO odd"), which refers to problems 1, 5, 9, 13, and so on. You may want to circle these problems in the textbook to make sure you are completing the correct ones.

- Concept Extensions are included at the end of each problem set for additional learning and challenges. There are some extension problems included in the assignment list, but you are encouraged to explore as many of these problems as you wish.

- There is a Standardized Test Practice section at the end of each chapter that provides practice for standardized testing. You might consider completing a few of these throughout the course.

- This course contains 10 required units and 1 optional bonus unit. If time allows, you are encouraged to complete part or all of this unit for extra enrichment at the end of the course. Please consult with your teacher before starting this bonus unit.

- Your teacher will provide access information for MyMathLab, where you will find online instructional videos for each textbook section. These videos can be accessed in the course menu under Multimedia Library. From the CHAPTER drop-down menu, choose the chapter you are working on. Under MEDIA TYPE, select Section Video Lectures, then click Find Now. A library of video resources will appear. (You can also access chapter test prep videos, a digital copy of the textbook, and other resources from this menu.)

- When checking your answers to exercise sets, you can find detailed solutions to odd-numbered problems on MyMathLab under Chapter Contents > Student Solutions Manual.

We wish you a challenging and successful year of Algebra 1!

Algebra 1 Assignments

Chapter 1: Review of Real Numbers

Suggested time: 2 weeks

Section	Page (textbook)	Problems
1.1 Tips for Success in Mathematics	ix 1	□ Read the preface □ Read section 1.1

1.2 Symbols and Sets of Numbers	15	1.2 Exercise Set
		    □ 1–19 odd
		    □ 23–29 odd
		    □ 35–59 odd
		    □ 69–75 odd

1.3 Fractions	22	1.3 Exercise Set
		    □ 1–17 odd
		    □ 41–45 odd
		    □ 55–81 odd
		    □ 85 and 87

1.4 Introduction to Variable Expressions and Equations	33	1.4 Exercise Set
		    □ 1–41 odd
		    □ 57–61 odd
		    □ 65 and 67
		    □ 75–91 odd

1.5 Adding Real Numbers	41	1.5 Exercise Set
		    □ 1–61 every other (EO) odd
		    □ 65–81 odd

1.6 Subtracting Real Numbers	47	1.6 Exercise Set □ 1–65 EO odd
Integrated Review: Operations on Real Numbers	49	□ 1–45 odd
Submit the above work (with answers checked and corrections noted) to your Oak Meadow teacher before continuing.		

Chapter 1: Review of Real Numbers (*continued*)   Suggested time: 2 weeks

Section	Page (textbook)	Problems
1.7 Adding and Subtracting Matrices	53	1.7 Exercise Set □ 1–25 odd
1.8 Multiplying and Dividing Real Numbers	60	1.8 Exercise Set □ 1–115 EO odd
1.9 Properties of Real Numbers	67	1.9 Exercise Set □ 1–81 EO odd
Optional: Chapter 1 Review and Vocabulary Check	76	□ complete problems as needed
Chapter 1 Test	79	□ all problems
Optional: Chapter 1 Standardized Test Practice	80	□ complete problems as needed
Oak Meadow Assessment Test 1		□ all problems
Submit the above work to your teacher (with answers checked and corrections noted on everything but the Oak Meadow Assessment Test) before continuing to the next chapter.		

Assessment Test

Please show all your work in the space provided.

Translate the following statements into symbols.

1. Twenty-five is less than the absolute value of negative forty.

2. The difference of fifteen and nine is greater than three.

Simplify the following expressions.

3. $12 - (-8) =$

4. $-23 + 9 =$

5. $(-4)(-8) =$

6. $(-3)(9) =$

7. $6 - 5 \div 5 \cdot 2 + 1 =$

8. $\dfrac{9}{0} =$

9. $\dfrac{24}{|-3|}$

10. $\dfrac{4 - |-5|}{7 - 10}$

11. $\frac{2}{5} - \frac{3}{10} =$

12. $4\frac{5}{7} - 3\frac{1}{14} =$

13. $\frac{(5)(-7)(0)}{7}$

14. $2(-3)^2 + 17 =$

15. $5[2 - 6(4 - 9) + 7] =$

16. $\frac{-3 - 7}{-1 - (-3)} \div (3 - 8) - \frac{1}{3}$

17. $\frac{16 - 4(7)}{6} =$

Insert <, >, or = in the appropriate space to make each of the following statements true.

18. -7 ☐ 3 19. $-|-4|$ ☐ $-6 - (-2)$

20. 0 ☐ -6 21. $|-13|$ ☐ 12

22. James has a collection of 1,296 baseball cards and a collection of 3,762 marbles. Write an inequality statement comparing 1,296 and 3,762.

23. Given $\{-12, -\pi, -3, 0, \frac{2}{5}, \sqrt{6}, 4, 9.36, 15\}$, list the numbers in this set that also belong to the set of:

   a. Natural numbers

   b. Whole numbers

   c. Integers

   d. Rational numbers

   e. Irrational numbers

   f. Real numbers

If x = −3, y = 4, and z = −5, evaluate each expression.

24. $x^2 - y^2$ 25. $xy - z$

26. $12 - 4z + x$ 27. $\dfrac{2z + x + 4}{y}$

Identify the property illustrated by each expression.

28. $9 + 3 = 3 + 9$ 29. $5 + -5 = 0$

30. $4 \cdot (3 \cdot 9) = (4 \cdot 3) \cdot 9$ 31. $2(x + y) = 2x + 2y$

32. Find the reciprocal of $\dfrac{5}{8}$.   33. Find the opposite of −6.

34. Maria's bank account balance on the last day of each month is reflected in the following chart.

Month	Balance (in dollars)
January	47
February	63
March	25
April	−17

Based on her monthly account balance, between which two months did Maria spend the most money?

35. Using the chart above, how much money did Maria deposit (add to her account) in the month of February?

36. The outside temperature when Nico woke up this morning was −8 degrees. By 3:00 pm, the temperature had risen 22 degrees. What was the temperature at 3:00 pm?

37. Berta started a business that had varying net income in the first four years. In 2017, she made $12 million; in 2018, she lost money and netted −$7 million; in 2019, she made $22 million; and in 2020, she lost money again and netted −$2 million. What was Berta's net income for these four years?

In exercises 38–39, let

$$A = \begin{bmatrix} 5 & -2 \\ 0 & 3 \end{bmatrix} \text{ and } B = \begin{bmatrix} 1 & -3 \\ -4 & 7 \end{bmatrix}$$

Carry out the indicated operations.

38. $A - B$ 39. $A + B$