

# Algebra 1 Mid-term Exam

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Congratulations on your purchase of *Unlocking the Door to Algebra – Part A*. You are taking the first step in truly understanding the fundamentals of Algebra 1.

I hope that by this point, you have thoroughly studied the units on Solving Equations, Graphing Equations, Writing Equations, and Systems of Equations. You are now half through the Algebra 1 curriculum!

So, are you ready to assess your knowledge and pull it all together to complete the Mid-term Exam? At the end of this assessment, you will know exactly what your strengths are and what areas you need to spend a little more time reviewing!

Here's how it works!

**Pages 3 – 8** are your answer sheets. You will record all of your answers on these sheets! The first section is multiple-choice. You will fill in the circle next to the correct answer choice. The second section is fill-in-the-blank and the third section is short answer.

**Pages 9-17** are the test! I recommend completing all the problems that you are comfortable with first. Then come back to complete the problems that challenge you.

**Pages 18-22** are the answer keys. Check your answer sheet with the key. The multiple-choice problems are worth 1 point. Either you got the problem right or wrong! The fill in the blank (section 2) problems are worth 2 points. If you got part of the problem right, you can give yourself 1 point. If you answered all parts of the problem correctly, you earned 2 points. The short answer problems are worth 3 points (except for problem 32 which is worth 4 points). If you got the answer wrong, but some of the work is correct, you can give yourself 1 point. If you got most of the answer correct, but forgot to answer a question, or made a minor error, you can give yourself 2 points. If you got all parts of the problem correct, give yourself 3 points (4 points for problem 32).

**Page 23** is the Analysis Sheet. This is the sheet where you analyze your progress. If you got any parts of a problem wrong, circle the problem number in the left column. If you circle more than 2 problems in any row, then you should go back and review that particular unit! This sheet just helps you to identify which units you need more help with before moving on!

**Pages 24 – 46** are the detailed, step-by-step answer keys. If you got any problems wrong, you can check your work with these answers. You will be able to find your mistakes and hopefully learn from those mistakes! If you have trouble grading the 3 or 4 point questions, these answers will show exactly what you needed to have in order to get full credit. This answer key is the most valuable part of the mid-term! Being able to identify your mistakes is the key to success in Algebra!

I hope that you found these four units and the mid-term helpful in your Algebra studies! Feel free to contact me if you have any questions or concerns.

Wishing you the best,

Karin Hutchinson

# Algebra 1 Exam – Answer Sheet

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## Part 1: Multiple Choice - Questions are worth 1 point each.

1. OA  
OB  
OC  
OD

2. OA  
OB  
OC  
OD

3. OA  
OB  
OC  
OD

4. OA  
OB  
OC  
OD

5. OA  
OB  
OC  
OD

6. OA  
OB  
OC  
OD

7. OA  
OB  
OC  
OD

8. OA  
OB  
OC  
OD

9. OA  
OB  
OC  
OD

10. OA  
OB  
OC  
OD

11. OA  
OB  
OC  
OD

12. OA  
OB  
OC  
OD

13. OA  
OB  
OC  
OD

14. OA  
OB  
OC  
OD

15. OA  
OB  
OC  
OD

16. OA  
OB  
OC  
OD

17. OA  
OB  
OC  
OD

18. OA  
OB  
OC  
OD

19. OA  
OB  
OC  
OD

20. OA  
OB  
OC  
OD

Multiple Choice - Total Correct:

\_\_\_\_\_ (out of 20 points total)

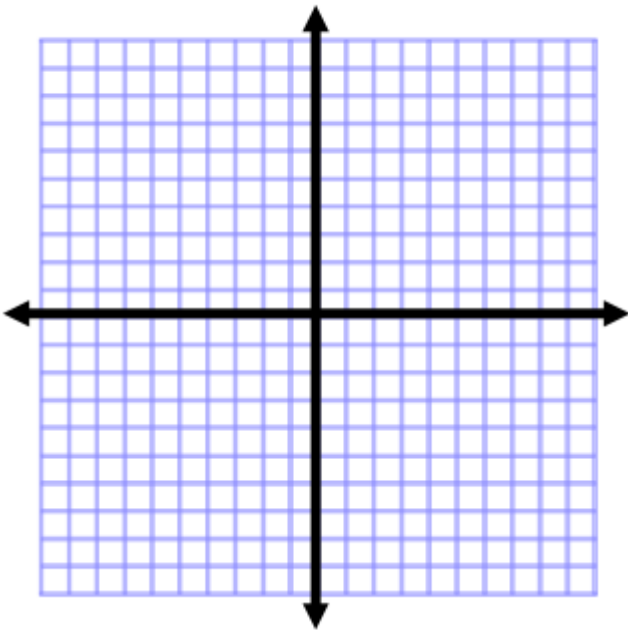
## Algebra 1 Answer Sheet - Continued

Part 2: Fill in the blank. Answers are worth 2 points each.

21. \_\_\_\_\_

22. \_\_\_\_\_

23. \_\_\_\_\_



\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

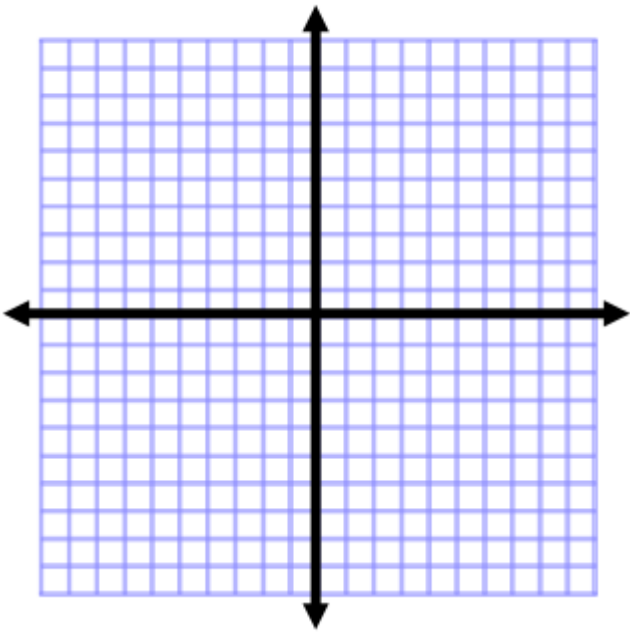
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\_\_\_\_\_

\_\_\_\_\_

24. \_\_\_\_\_

25.



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\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

26. \_\_\_\_\_

27. \_\_\_\_\_

Fill In the Blank - Total Correct:

\_\_\_\_\_ (out of 14 points total)



30. \_\_\_\_\_

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31. \_\_\_\_\_

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32. \_\_\_\_\_  
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\_\_\_\_\_

Short Answer - Total Correct:

\_\_\_\_\_ (out of 16 points total)

Mid-term Exam - Total Correct: (Add the total points for all 3 sections)

\_\_\_\_\_ (out of 50 points total)

45-50 – A

30 – 34 - D

40-44 – B

29 and below - E

35 – 39 -C

# Algebra 1 Mid-term Exam

**Directions:** For questions 1-20, circle the correct answer on your answer sheet.

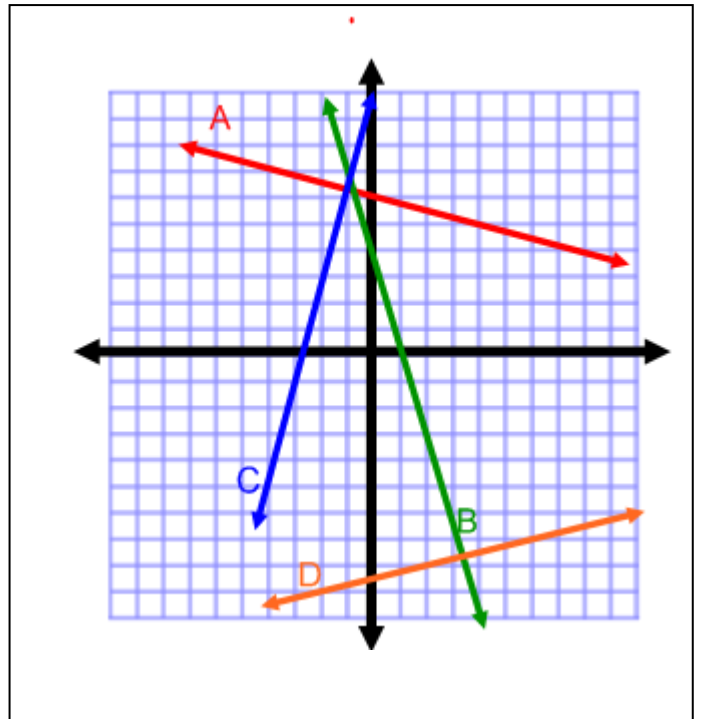
1. Which of the following steps would you use **first** to solve the following equation?

$$-7x + 4 = 22$$

- A. Divide both sides by -7.  
B. Add 4 to both sides.  
C. Subtract 4 from both sides.  
D. Multiply both sides by 4.

2. Which line on the graph has a slope of  $-1/4$ ?

- A. Line A  
B. Line B  
C. Line C  
D. Line D



3. Which equation has a slope of -3 and passes through the point (2,-10)?

- A.  $y = -3x - 4$   
B.  $y = -3x - 6$   
C.  $y = -3x - 16$   
D.  $y = 2x - 10$

## Mid-Term Analysis Sheet

**Directions:** For any problems, that you got wrong on the answer sheet, circle the number of the problem in the first column. When you are finished, you will be able to see which Algebra units you need to review before moving on. (If you have more than 2 circles for any unit, you should go back and review the examples and practice problems for that particular unit!)

<b>Problem Number</b>	<b>Algebra Unit</b>
<b>1, 7, 11, 14, 18, 21, 26,</b>	<b>Solving Equations Unit</b>
<b>2, 6, 9, 15, 20, 23, 27,</b>	<b>Graphing Equations Unit</b>
<b>3, 5, 10, 13, 16, 24, 29, 30, 31</b>	<b>Writing Equations Unit</b>
<b>4, 8, 12, 17, 19, 22, 25, 28, 32</b>	<b>Systems of Equations Unit</b>

The pages that follow contain step-by-step solutions to all of the problems on the Mid-term exam. Use the solutions to help you identify your mistakes!

Please take the time to go back and review the problems that you got incorrect! All of the skills that you learned in these first four units, will be needed to solve problems in the upcoming units!

# Algebra 1 Mid-term Exam (Answer Key)

**Directions:** For questions 1-20, circle the correct answer on your answer sheet.

1. Which of the following steps would you use **first** to solve the following equation?  
 $-7x + 4 = 22$

In order to solve this problem, you have to think about getting  $x$  by itself on one side of the equation. Therefore, we must first get rid of the 4 by subtracting 4 from both sides of the equation. We are subtracting 4 because the opposite of ADD 4 is SUBTRACT 4!

- A. Divide both sides by  $-7$ .  
B. Add 4 to both sides.  
C. Subtract 4 from both sides.  
D. Multiply both sides by 4.

2. Which line on the graph has a slope of  $-1/4$ ?

- A. Line A  
B. Line B  
C. Line C  
D. Line D

In order to figure out which line has a slope of  $-1/4$ , you would need to count the rise and run for each line. The rise should be 1 and the run 4.

**\*\*HINT\*\*** You can rule out lines C and D from the start. Lines C and D have positive slopes because the line is rising from left to right. Therefore, the slope CANNOT be **negative**  $1/4$ !

Line A has a rise of 1 and a run of 4 and it is falling from left to right. Line A's slope is  $-1/4$ .

$$\text{Slope} = \frac{\text{Rise}}{\text{Run}} = \frac{-1}{4}$$

