

**Unit 1 Test Alg 1****Multiple Choice**

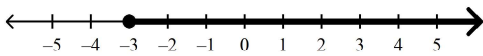
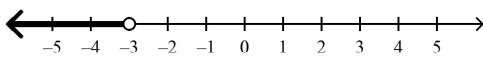
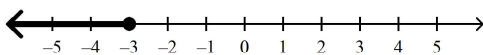
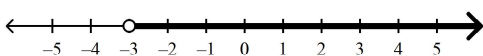
Identify the choice that best completes the statement or answers the question. Write the letter of your answer on the line provided to the left.

**Write the set described.**

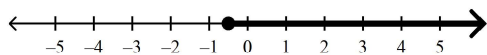
- \_\_\_\_\_ 1.  $D$  is the set of whole numbers less than 3.
- $D = \{0,1,2,3,4,5,6,7\}$
  - $D = \{0,1\}$
  - $D = \{0,1,2\}$
  - $D = \{0,1,2,3,4,5\}$

- \_\_\_\_\_ 2. What is the order of  $\sqrt{5}$ ,  $-0.1$ ,  $-\frac{5}{3}$ ,  $0.7$ ,  $\sqrt{2}$  from least to greatest?
- $0.7, \sqrt{2}, -\frac{5}{3}, \sqrt{5}, -0.1$
  - $-\frac{5}{3}, -0.1, 0.7, \sqrt{2}, \sqrt{5}$
  - $-0.1, 0.7, \sqrt{2}, \sqrt{5}, -\frac{5}{3}$
  - $\sqrt{5}, \sqrt{2}, 0.7, -\frac{5}{3}, -0.1$

**What is the graph of the inequality?**

- \_\_\_\_\_ 3.  $x \geq -3$
- 
  - 
  - 
  - 

**What inequality represents the graph?**

- \_\_\_\_\_ 4. 
- $m \geq \frac{1}{2}$
  - $m \geq -\frac{1}{2}$
  - $m > -\frac{1}{2}$
  - $m \leq -\frac{1}{2}$

**Which number is a solution of the inequality?**

- \_\_\_\_\_ 5.  $m > \frac{7}{12}$   
a.  $-5$                       b.  $-1$                       c.  $-9$                       d.  $1$
- \_\_\_\_\_ 6. You made two deposits to your bank account this month. One deposit was \$17.92, and the second deposit was \$15.33. Your balance at the end of the month is \$72.31, and you made no withdrawals. Write and evaluate an expression for your balance at the beginning of the month.  
a.  $\$72.31 - \$17.92 - \$15.33$ ; \$39.06  
b.  $\$72.31 + (\$17.92 - \$15.33)$ ; \$74.90  
c.  $\$72.31 - (\$17.92 - \$15.33)$ ; \$69.72  
d.  $\$72.31 + \$17.92 + \$15.33$ ; \$105.56
- \_\_\_\_\_ 7. John and 4 friends are going out for pizza for lunch. They split one pizza and 5 large drinks. The pizza cost \$10.00. They spend a total of \$18.75. Find the cost of one large drink.  
a. \$2.19                      b. \$1.75                      c. \$1.80                      d. \$7.19
- \_\_\_\_\_ 8.  $12 - 9z = -11 - 9z$   
a. no solution                      c.  $-1\frac{5}{18}$   
b.  $-\frac{1}{9}$                       d. infinitely many solutions
- \_\_\_\_\_ 9. To which subsets of the real numbers does the number  $\sqrt{42}$  belong?  
a. whole numbers, integers, rational numbers  
b. whole numbers, natural numbers, integers  
c. irrational numbers  
d. rational numbers
- \_\_\_\_\_ 10. A mountain climber ascends a mountain to its peak. The peak is 12,740 ft above sea level. The climber then descends 200 ft to meet a fellow climber. Find the climber's elevation above sea level after meeting the other climber.  
a. 12,540 ft                      b. 10,740 ft                      c. 12,940 ft                      d.  $-12,540$  ft

- \_\_\_\_ 11. Suppose you had  $d$  dollars in your bank account. You spent \$12 but have at least \$51 left. How much money did you have initially? Write and solve an inequality that represents this situation.
- a.  $d + 12 \geq 51; d \geq 75$
  - b.  $d - 12 \geq 51; d \geq 63$
  - c.  $d - 12 > 51; d > 63$
  - d.  $d + 12 \leq 51; d \leq 75$
- \_\_\_\_ 12. A student scored 83 and 91 on her first two quizzes. Write and solve a compound inequality to find the possible values for a third quiz score that would give her an average between 85 and 90, inclusive.
- a.  $90 \leq \frac{83 + 91 + n}{3} \leq 85; 96 \leq n \leq 81$
  - b.  $85 \leq \frac{83 + 91}{2} + n \leq 90; -2 \leq n \leq 3$
  - c.  $85 \leq \frac{83 + 91 + n}{3} \leq 90; 81 \leq n \leq 96$
  - d.  $83 \leq \frac{85 + 91 + n}{3} \leq 90; 73 \leq n \leq 94$
- \_\_\_\_ 13. Hannah wants to buy a \$540 camera. She can save \$35 each week from her paycheck. However, before Hannah can buy the camera, she must give her brother \$90 that she owes him. For how many weeks will Hannah need to save before she can pay back her brother and buy the camera?
- a. 21 weeks
  - b. 18 weeks
  - c. 20 weeks
  - d. 17 weeks

**Short Answer:** Show all work for credit. Write your final answer on the line provided.

**What is the solution of the equation?**

14.  $\frac{3p}{5} + \frac{8}{5} = 1$

\_\_\_\_\_

**What is the solution of the equation?**

15.  $-4x - 9 = -5 - 6x$

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**What is the solution of the equation?**

16.  $5(10x - 10) = -5(-4x + 4)$

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17. What equation do you get when you solve  $z - m = z + bx$  for  $x$ ?

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**What is the solution of the equation?**

18.  $\frac{b + 8}{-3} = -15$

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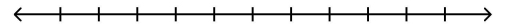
**What compound inequality represents the phrase? Graph the solutions.**

19. all real numbers at least  $-5$  and at most  $9$



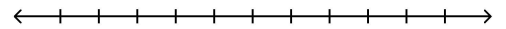
**What are the solutions of the inequality? Graph and check the solutions.**

20.  $-\frac{x}{4} \leq 2$



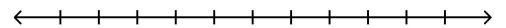
**What are the solutions of the inequality?**

21.  $12 + 10w \geq 8(w + 12)$



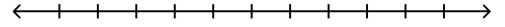
**What are the solutions of the compound inequality? Graph the solutions.**

22.  $2x - 2 < -12$  or  $2x + 3 > 7$



**What are the solutions of the compound inequality? Graph the solutions.**

23.  $-2 < 4x - 10 < 6$



**What are the solutions of the equation? Graph and check the solutions.**

24.  $|x| + 9 = 7$



25.  $|2x + 1| - 3 = 10$



**Unit 1 Test Alg 1**  
**Answer Section**

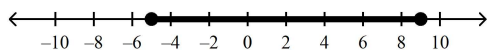
**MULTIPLE CHOICE**

- |            |        |  |
|------------|--------|--|
| 1. ANS: C  | PTS: 1 | TOP: 1-1 Example 1 Understand Sets and Subsets                               |
| 2. ANS: B  | PTS: 1 | TOP: 1-1 Example 2 Compare and Order Real Numbers                            |
| 3. ANS: A  | PTS: 1 | TOP: 1-5 Example 1 Solve Inequalities  |
| 4. ANS: B  | PTS: 1 | TOP: 1-5 Example 1 Solve Inequalities  |
| 5. ANS: D  | PTS: 1 | TOP: 1-5 Example 1 Solve Inequalities  |
| 6. ANS: A  | PTS: 1 | TOP: 1-1 Example 3 Operations with Rational Numbers                          |
| 7. ANS: B  | PTS: 1 | TOP: 1-2 Example 4 Use Linear Equations to Solve Problems                    |
| 8. ANS: A  | PTS: 1 |  |
|            |        | TOP: 1-3 Example 2 Understand Equations With Infinitely Many or No Solutions |
| 9. ANS: C  | PTS: 1 | TOP: 1-1 Example 1 Understand Sets and Subsets                               |
| 10. ANS: A | PTS: 1 | TOP: 1-1 Example 3 Operations with Rational Numbers                          |
| 11. ANS: B | PTS: 1 | TOP: 1-5 Example 4 Use Inequalities to Solve Problems                        |
| 12. ANS: C | PTS: 1 |  |
|            |        | TOP: 1-6 Example 4 Solve Problems Involving Compound Inequalities            |
| 13. ANS: B | PTS: 1 | TOP: 1-2 Example 4 Use Linear Equations to Solve Problems                    |

**SHORT ANSWER**

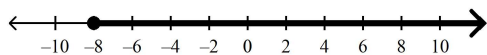
- |                    |        |  |
|--------------------|--------|--|
| 14. ANS:           |        |  |
| -1                 |        |  |
|                    | PTS: 1 | TOP: 1-2 Example 4 Use Linear Equations to Solve Problems          |
| 15. ANS:           |        |  |
| 2                  |        |  |
|                    | PTS: 1 | TOP: 1-3 Example 1 Solving Equations With a Variable on Both Sides |
| 16. ANS:           |        |  |
| 1                  |        |  |
|                    | PTS: 1 | TOP: 1-3 Example 1 Solving Equations With a Variable on Both Sides |
| 17. ANS:           |        |  |
| $x = -\frac{m}{b}$ |        |  |
|                    | PTS: 1 | TOP: 1-4 Example 1 Rewrite Literal Equations                       |
| 18. ANS:           |        |  |
| 37                 |        |  |
|                    | PTS: 1 | TOP: 1-2 Example 1 Solve Linear Equations                          |

19. ANS:  
 $-5 \leq x \leq 9$



PTS: 1 TOP: 1-6 Example 1 Understand Compound Inequalities

20. ANS:  
 $x \geq -8$

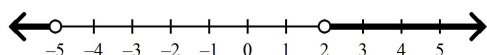


PTS: 1 TOP: 1-5 Example 1 Solve Inequalities

21. ANS:  
 $w \geq 42$

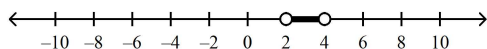
PTS: 1 TOP: 1-5 Example 2 Solve an Inequality With Variables on Both Sides

22. ANS:  
 $x < -5$  or  $x > 2$



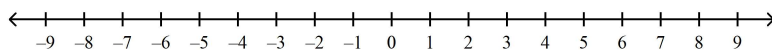
PTS: 1 TOP: 1-6 Example 2 Solve a Compound Inequality Involving Or

23. ANS:  
 $2 < x < 4$



PTS: 1 TOP: 1-6 Example 3 Solve a Compound Inequality Involving And

24. ANS:  
 no solution



PTS: 1 TOP: 1-7 Example 1 Understand Absolute Value Equations

25. ANS:  
 6 and -7

PTS: 1