

3123

Name: \_\_\_\_\_

### Algebra I Unit 1 Test

Date: \_\_\_\_\_ Bell: \_\_\_\_\_

(Algebra Basics)

**SHOW ALL WORK NEEDED TO ANSWER EACH QUESTION!**  
**PLACE YOUR FINAL ANSWER IN THE BOX. GOOD LUCK! ☺**

1. Which is the smallest set of real numbers that contains the value below?

$$-\frac{18}{6} = -3$$

- A. Irrational Numbers
- B. Rational Numbers
- C. Natural Numbers
- D. Integers

**D**

2. Which set contains the value below?

$$\sqrt{50}$$

- A. Irrational Numbers
- B. Natural Numbers
- C. Rational Numbers
- D. Integers

**A**

3. The set below only contains which types of numbers?

$$\{-1, 5, \frac{1}{2}, 15, 3.75, 36, \sqrt{81}, 100\}$$

- A. Irrational Numbers
- B. Rational Numbers
- C. Integers
- D. Natural Numbers

**B**

4. Select all sets to which the value below belongs.

$$\sqrt{2} - \sqrt{2} = 0$$

- Real Numbers
- Irrational Numbers
- Rational Numbers
- Integers
- Whole Numbers
- Natural Numbers

5. Which of the following is true regarding number sets?

- A. All integers are whole numbers.
- B. All irrational numbers are real numbers.
- C. All real numbers are integers.
- D. All rational numbers are natural numbers.

**B**

6. Which property justifies the statement below?

$$x(y - 3) = xy - 3x$$

- A. Associative Property
- B. Transitive Property
- C. Distributive Property
- D. Commutative Property

**C**



15. Simplify the expression below

$$\frac{(3-13)^2 + 14}{4^2 - 5 \cdot 2}$$

$$\frac{(-10)^2 + 14}{4^2 - 5 \cdot 2} = \frac{100 + 14}{16 - 10}$$

$$\frac{100 + 14}{16 - 10} = \frac{114}{6}$$

19

16. Evaluate the expression below if  
 $a = -8, b = 17,$  and  $c = 21$

$$a^2 - (b + c)$$

$$(-8)^2 - (17 + 21)$$

$$64 - 38 = 26$$

26

17. Evaluate the expression below if  
 $x = -1$  and  $y = 3$

$$3x^2 - y^2$$

$$3(-1)^2 - (3)^2$$

$$3(1) - 9$$

$$3 - 9$$

-6

18. Evaluate the expression below if  
 $a = 8$  and  $b = -5$

$$|a| - |b|$$

$$|8| - |-5|$$

$$8 - 5$$

3

19. Translate statement below.

"One less than twice a number."

$$1 - 2x$$

A.  $1 - n^2$

B.  $n^2 - 1$

C.  $1 - 2n$

D.  $2n - 1$

$$2x - 1$$

D

20. Translate the statement below.

"Five times the difference of a number and 3 is 17."

A.  $5n - 3 = 17$

B.  $5(n - 3) = 17$

C.  $\frac{5n}{3} = 17$

D.  $5\left(\frac{n}{3}\right) = 17$

$$5(n - 3) = 17$$

B

21. Translate the statement below.

"A number is no more than 50"

70

A.  $x < 50$

B.  $x \leq 50$

C.  $x > 50$

D.  $x \geq 50$

B

22. Translate the statement below

"Your grade must be at least 64 to pass this class"

A.  $g < 64$

B.  $g \leq 64$

C.  $g > 64$

D.  $g \geq 64$

D



23. Simplify the expression below.

$$2m - 16 + 5m + 45$$

$$7m + 29$$

- A.  $7m + 29$
- B.  $7m + 61$
- C.  $-3m + 29$
- D.  $-3m + 61$

**A**

24. Simplify the expression below.

$$2x - 4y + 6 + 3x - 9y - 4$$

$$5x - 13y + 2$$

- A.  $5x + 13y + 2$
- B.  $5x - 13y + 2$
- C.  $5x - 5y + 2$
- D.  $-8xy + 2$

**B**

25. Simplify the expression below completely.

$$10 - 4(2x + 7)$$

$$10 - 8x - 28$$

$$-8x - 18$$

**-8x - 18**

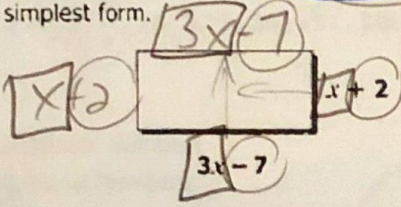
26. Simplify the expression below completely.

$$4(5w - 3) - (w - 1)$$

$$20w - 12 - w + 1$$

**19w - 11**

27. Give the perimeter of the rectangle below in simplest form.



**8x - 10**

28. Identify the first step to solve the equation below.

$$\frac{x}{-4} + 7 = -1$$

- A. Add 4
- B. Subtract 7
- C. Multiply by -4
- D. Add 1

$$\frac{x}{-4} = -8$$

**B**

29. Solve the equation below.

$$5x + 1 = -49$$

$$5x = -50$$

$$x = -10$$

**x = -10**

30. Solve the equation below.

$$\frac{2}{3}x - 5 = 7$$

$$2x = 36$$

$$x = 18$$

**x = 18**