Name: _____

Date: _____ Bell: _____

Algebra I Unit 1 Test

(Algebra Basics)

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

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

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

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

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2. Which set contains the value below?

$$\sqrt{50}$$

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

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

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

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

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

$$\sqrt{2} - \sqrt{2}$$

☐ Real Numbers
☐ Irrational Numbers
☐ Rational Numbers
☐ Integers
☐ Whole Numbers
☐ Natural Numbers

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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.

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6. Which property justifies the statement below?

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

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

15. Simplify the expression below.

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

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

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

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

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

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

$$|a| - |b|$$

19. Translate statement below.

"One less than twice a number."

A. $1 - n^2$

B. $n^2 - 1$

C. $1 - 2n$

D. $2n - 1$

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

21. Translate the statement below.

"A number is no more than 50"

A. $x < 50$

B. $x \le 50$

C. $x > 50$

D. $x \ge 50$

22. Translate the statement below

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

A. $g < 64$

B. $g \le 64$

C. $g > 64$

D. $g \ge 64$

23. Simplify the expression below.

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

A. $7m + 29$

B. $7m + 61$

C. $-3m + 29$

D. $-3m + 61$

24. Simplify the expression below.

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

A. $5x + 13y + 2$
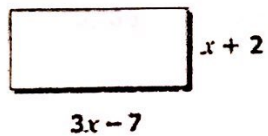
B. $5x - 13y + 2$

C. $5x - 5y + 2$

D. $-8xy + 2$

25. Simplify the expression below completely.

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

26. Simplify the expression below completely.

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

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

$x + 2$

$3x - 7$

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

29. Solve the equation below.

$$5x + 1 = -49$$

30. Solve the equation below.

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