Name: _____ Section:_____ Date:_____

Unit 1 Pre-Test

Section I. - Vocabulary - 1 pt. Per blank.

Write the vocabulary word from the word bank next to the definition. *Not all words will be used.*

Domain	Term	Power	Relation	Function
Coefficient	Variable	Range	Power	Equation

1. _____ - Symbol used to represent unspecified numbers or values
2. _____ - May be a number, a variable, or a product or quotient of numbers and variables.
3. _____ - The set of the first numbers of the ordered pairs in a relation.
4. _____ - A relationship between input and output. In a function, there is exactly one output for each input.
5. _____ - The set of second numbers of the ordered pairs in a relation.

Section II. - Variable and Expressions - 2 pts. Per question.

#6-8 Write an algebraic expression for the given verbal expression. Use *n* for a number.

6. The sum of a number and 10.

7. Nine less than g to the fourth power.

8. The quotient of a number and 9 times 3.

#9-11 Write a verbal expression for the given algebraic expression.

9. $9a^2$

10. $4 - 5h$

11. $\frac{1}{3}k$

Section III. - Order of Operation - 4 pts. Per question.

Simplify the following expressions.

12. $14 \div 7 \cdot 5 - 3^2$

13. $3\left[4 - 8 + 4^2(2 + 5)\right]$

Evaluate each expression if *a* = 8, *b* = 4, and *c* = 16.

14. $a^2bc - b^2$

15. $\dfrac{2b + 3c^2}{4a^2 - 2b}$

Section IV. - Distributive Property - 3 pts. Per question.

Use the Distributive Property to rewrite each expression. Then evaluate.

16. 3(8 - 2*x*)

17. 2(3*a* - 2*b* + *c*)

18. ¼ (12 - 4*t*)

19. 12(2 + 1/2*x*)

Section V. - Properties of Real Numbers. - 1 pts. Per blank.

Fill in the missing lines. 1 Pt. per blank.

20. $2[¼ + (½)^2]$	_____GIVEN_____
$= 2 (¼ + ¼)$	_____SUBSTITUTION_____
= _____	_____
= 1	_____
21. $18 * 1 - 3 * 2 + 2(6 \div 3 - 2)$	_____GIVEN_____
$= 18 * 1 - 3 * 2 + 2(2 - 2)$	_____SUBSTITUTION_____
= 18 * 1 - 3 * 2 + 2 (_____)	_____
= 18 - 3 * 2 + 2(0)	_____
= _____	_____SUBSTITUTION_____
= 18 - 6 + 0	_____
= _____	_____SUBSTITUTION_____
= 12	_____

Section VI. - Equations - 2 pts. Per question.

Given the replacement set, *a* = {4, 5, 6, 7, 8}, find the solution of eqch equation.

22. $5a - 9 = 26$

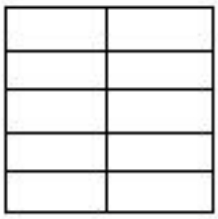
23. $7a + 21 = 56$

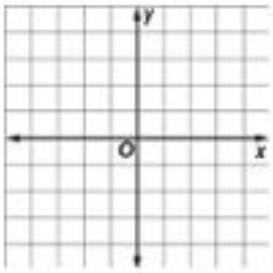
24. $4a - 8 = 16$

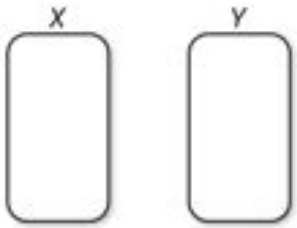
Section VII. - Relations. #25- 5 pts. #26 - 2 pts

Express {(4, 3), (–1, 4), (3, –2), (–2, 1)} as a table, a graph, and a mapping. Then determine the domain and range.

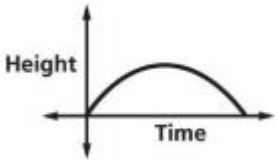
25.







26. **The graph below represents the height of a football after it is kicked downfield. Describe what is happening.**



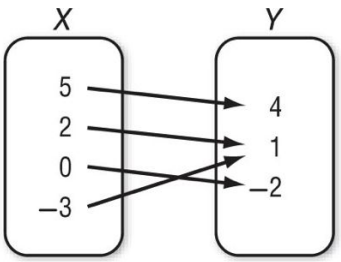
Section VIII. - Functions. #27-30 1 pt. Per question. #31-33 2pts. Per question

Circle yes or no if the relation is a function.

27. {(6, -1), (-4, 2), (5, 2), (4, 6), (6, 5)}

YES NO

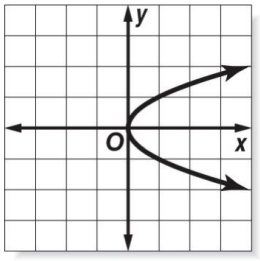
28.



YES

NO

29.



YES

NO

30.

x	y
3	7
–1	1
1	0
3	5
7	3

YES

NO

If $f(x) = 3x + 2$ and $g(x) = -x$, find each value.

31. $f(4)$

32. $f(g(2))$

33. $g(-1) + 4$

33. $f(1) + g(2)$