Name: _____ Class: _____ Date: _____ ID: A

Apply and Manipulate Properties of Operations with Expressions Review

Multiple Choice
Identify the letter of the choice that best completes the statement or answers the question.

Evaluate each expression for the given value of the variable.

____ 1. $10z + 6$ for $z = 9$
a. $9z + 6$
b. 150
c. 115
d. 96

____ 2. $z \div 9 + z$ for $z = 45$
a. 81
b. $\frac{1}{6}$
c. 50
d. $45z \div 9 + 45z$

____ 3. $2z^2 + 8z$ for $z = 3$
a. $3z^2 + 3z$
b. 36
c. 30
d. 42

____ 4. Evaluate the following expression for the given values of the variables.

$\frac{15}{y} - z$ for $y = 5$ and $z = 1$

a. –6
b. $\frac{15}{5y} + 1z$
c. 2
d. $2\frac{4}{5}$

____ 5. Evaluate the following expression for the given values of the variables.

$\frac{54}{x} + 2y$ for $x = 9$ and $y = 2$

a. 10
b. 28
c. $\frac{54}{9x} + 2y$
d. $6\frac{4}{9}$

____ 6. Write this phrase as an algebraic expression.

13 more than a number

a. $13 + t$
b. $t + 13$
c. $t - 13t$
d. $13 \div t$

____ 7. Write this phrase as an algebraic expression.

2 less than a number times 30

a. $30 + y$
b. $30 \div y$
c. $2y - 30y$
d. $30y - 2$

____ 8. Write this phrase as an algebraic expression.

7 times the sum of a number and 21

a. $21 \div t$
c. $21 + t$
b. $7(t+21)$
d. $7t - 21t$

____ 9. Write this phrase as an algebraic expression.

the sum of 2 times a number and 29

a. $29 + p$
c. $2p + 29$
b. $2p - 29p$
d. $29 \div p$

____ 10. Write this phrase as an algebraic expression.

18 less than a number

a. $p - 18$
c. $p - 18p$
b. $18 + p$
d. $18 \div p$

____ 11. Write this phrase as an algebraic expression.

2 times the sum of a number and 21

a. $21 + y$
c. $21 \div y$
b. $2y - 21y$
d. $2(y+21)$

____ 12. Ramon paints t planks each day of a fence which has a total of 300 planks. Write an algebraic expression for how many days it will take Ramon to finish painting the fence.

a. $300t$
c. $300 - t$
b. $\frac{300}{t}$
d. $\frac{t}{300}$

____ 13. Rosa earns $90 delivering flowers, but he then spends m dollars at the bookstore. Write an algebraic expression to find how much money Rosa has left.

a. $90 - m$
c. $\frac{m}{90}$
b. $m - 90$
d. $\frac{90}{m}$

____ 14. Identify like terms in the list:

$9a$, $\frac{t}{7}$, $6y^5$, $3t$, x^5, $3z$, k, $7.5y^5$, $5t$, $\frac{5}{7}a$

a. $3t$ and $3z$

b. $\frac{t}{7}$ and $\frac{5}{7}a$

c. $9a$ and $\frac{5}{7}a$; $\frac{t}{7}$, $3t$, and $5t$; $6y^5$ and $7.5y^5$

d. $6y^5$, x^5, and $7.5y^5$

____ 15. Identify like terms in the list:

$6t,\ \frac{y}{7},\ 8x^5,\ 4y,\ z^5,\ 4k,\ b,\ 8.5x^5,\ 9y,\ \frac{7}{9}t$

a. $4y$ and $4k$

b. $\frac{y}{7}$ and $\frac{7}{9}t$

c. $8x^5$, z^5, and $8.5x^5$

d. $6t$ and $\frac{7}{9}t$; $\frac{y}{7}$, $4y$, and $9y$; $8x^5$ and $8.5x^5$

____ 16. Combine like terms.

$4y^3 + 7x + 2y^3 + 5x - 3y^2$

a. $3y^3 + 12x$

b. $8y^3 + 35x - 3y^2$

c. $6y^3 + 12x - 3y^2$

d. $2y^3 + 2x - 3y^2$

____ 17. Combine like terms.

$9y^3 + 9x + y^3 + x + 7y^2$

a. $10y^3 + 10x + 7y^2$

b. $17y^3 + 10x$

c. $8y^3 + 8x + 7y^2$

d. $9y^3 + 9x + 7y^2$

____ 18. Combine like terms.

$8t^4 + 10y + 6t^4 - 3y + 4t^3$

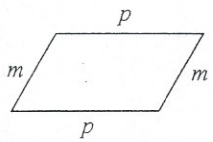
a. $2t^4 + 13y + 4t^3$

b. $48t^4 - 30y + 4t^3$

c. $14t^4 + 7y + 4t^3$

d. $18t^4 + 7y$

____ 19. Write an expression for the perimeter of the parallelogram shown. Combine like terms in the expression.



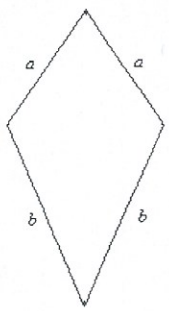
a. $2m + 2p$

b. $m^2 + p^2$

c. $(m + 2) + (p + 2)$

d. $m + p + m + p$

____ 20. Write an expression for the perimeter of the kite shown. Combine like terms in the expression.



a. $2a + 2b$

b. $a^2 + b^2$

c. $(a + 2) + (a + 2)$

d. $a + a + b + b$

Name: _____ ID: A

Matching

Match each of the following vocabulary words with its definition.

a. Addition Property of Equality
b. evaluate
c. isolate the variable
d. Multiplication Property of Equality
e. term
f. variable
g. standard form
h. scientific notation

____ 21. the parts of an expression that are added or subtracted
____ 22. a symbol used to represent a quantity that can change

Match each of the following vocabulary words with its definition.

a. algebraic expression
b. coefficient
c. equation
d. solution
e. Subtraction Property of Equality
f. verbal expression
g. expression
h. composite number

____ 23. the number that is multiplied by the variable in an algebraic expression
____ 24. a word or phrase
____ 25. an expression that contains at least one variable

Match each of the following vocabulary words with its definition.

a. constant
b. Division Property of Equality
c. inverse operations
d. like terms
e. solve
f. power
g. multiple
h. least common multiple (LCM)

____ 26. a value that does not change
____ 27. two or more terms that have the same variable raised to the same power
____ 28. a number produced by raising a base to an exponent

____ 29. $5t + 7y - 3t + 4y + 5$
a. $8t + 3y + 5$
b. $-15t + 28y + 5$
c. $2t + 11y + 5$
d. $2t + 11y$

____ 30. $9x + 7z - 2x + 2z - 9$
a. $7x + 9z$
b. $11x + 5z - 9$
c. $7x + 9z - 9$
d. $-18x + 14z - 9$

____ 31. $3k + 9 - k + 4$
a. $2k + 13$
b. $2k + 5$
c. $-3k + 36$
d. $4k + 5$

____ 32. $5x + 10 - 3x + 2$
a. $2x + 8$
b. $8x + 8$
c. $2x + 12$
d. $-15x + 20$

____ 33. Simplify $6(2x - 7) - 3x$.
a. $15x - 42$
b. $9x - 42$
c. $9x - 7$
d. $9x + 42$

____ 34. Simplify $6(10t - 5) - t$.
a. $61t - 30$
b. $59t - 30$
c. $59t - 5$
d. $59t + 30$

Simplify.

36) $4k + 2k - 9$

_____

37) $-12a^2 + 5a + 3 + 3a^2 + (-10a)$

_____

38) $11(8 - 9d)$

_____

39) $6(4x - 3 + 7j)$

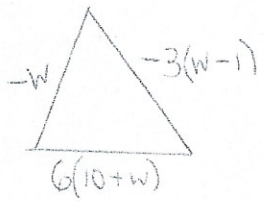
_____

40) $-11(-8x + 7) + 3$

_____

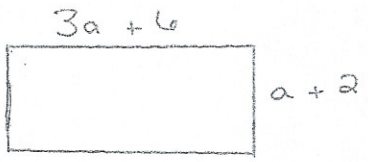
Find the perimeter. Simplify.

41)



_____

42)



_____

Write an algebraic expression on the line provided.

43) The quotient of the number of markers and fourteen: _____

44) Fifteen inches longer than the length of w: _____

45) Eight less than five times of r: _____

46) Three-fourth of the sum of z and 9: _____

Evaluate the algebraic expression when c = 3, and d = -4.

47) $c(d+ 7)$

_____

48) $6 - cd$

_____

Evaluate the algebraic expression when k = -7, and p = 6.

49) $-k + 2p$

_____

50) $-3p - 6k + 10$

_____