Name KEY Class _____ Date _____

Chapter 1 Exam Review

Form G

Do you know HOW?

Write an algebraic expression for each phrase.

1. 12 more than 5 times c → $5c+12$
2. 1 less than the quotient of a number n and 6 → $\frac{n}{6}-1$
3. 12 times the quantity 15 minus a number d → $12(15-d)$

Simplify each expression.

4. $22+(3^2-4^2)$
$22+(9-16)$
$22+(-7)$
15

5. $\pm\sqrt{169}$
± 13

6. $(3^3-19)^2$
$(27-19)^2$
8^2
64

7. $\frac{3}{4}+\frac{2}{5}$
$\frac{15}{20}+\frac{8}{20}=\frac{23}{20}$

8. $-10-(-2)\cdot(-4^3)$
$-10+2\cdot(-64)$
$-10+-128$
-138

9. $\left(-\frac{3}{4}\right)^3$
$-\frac{27}{64}$

10. $5^2\div 2$
$\frac{25}{2}$

11. $\frac{3}{8}\cdot\frac{5}{7}\cdot\frac{6}{15}$
$\frac{3}{28}$

Evaluate each expression for the given values of the variables.

12. $5x+2y^2-y^3;\ x=2$ and $y=4$
$5(2)+2(4)^2-(4)^3$
$10+2(16)-64$
$10+32-64$
-22

13. $u+3v^2-2u^3;\ u=-1$ and $v=-3$
$-1+3(-3)^2-2(-1)^3$
$-1+3(9)-2(-1)$
$-1+27+2$
28

16. Name the subset(s) of the real numbers to which each number belongs.

$\sqrt{1.1}$ IRRATIONAL

-1 RATIONAL INTEGER

$\frac{1}{2}$ RATIONAL

17. Estimate $\sqrt{118}$ to the tenths place.

18. Which property is illustrated by $-8+0=-8$?

19. Are the following expressions equivalent? Explain.

$\frac{28mn}{7n}$ and $4m$ YES (REDUCE/CANCEL)

Name _____ Class _____ Date _____

Chapter 1 Chapter Test (continued) *Form G*

20. Is the ordered pair $(-8, -7)$ a solution to the equation $3x + 10 = 2y$?
Show your work. YES

$3(-8)+10 = 2(-7)$
$-24+10 = -14$
$-14 = -14$

21. Is the ordered pair $(5, 0)$ a solution to the equation $4x + 20 = 12y$?
Show your work. NO

$4(5)+20 = 12(0)$
$20+20 = 0$
$40 = 0$

22. If a negative number has an exponent, can it ever be negative when it is simplified? Explain. YES $(-1)^3 = -1$

23. Is division commutative? Provide an example to justify your answer. NO

$6 \div 3 = 2$
$3 \div 6 = \frac{1}{2}$

Simplify each expression.

24. $3(2x+4)-9$
$6x+12-9$
$6x+3$

25. $15x-4(-3-2x)$
$15x+12+8x$
$23x+12$

26. $-\frac{1}{4}(-4-2p)$
$1+\frac{1}{2}p$

Do you UNDERSTAND?

27. **Open-Ended** Write an equation that can be solved correctly in two different ways. Demonstrate both methods.

28. **Reasoning** Find the value of $22 \div 2 + 9 - 4^2 + 18$. Then change one operation sign and add one set of grouping symbols so that the value of the expression is 36.

Do this one

29. **Writing** Describe the difference between the set of whole numbers and the set of natural numbers. WHOLE #'S INCLUDE ZERO $\{0,1,2,3,4,\ldots\}$ NATURALS DO NOT $\{1,2,3,4,\ldots\}$

30. **Writing** Describe the process for finding the sum of two numbers with the same sign and the sum of two numbers with different signs.

31. What is the difference between an expression and an equation?

32. Create 2 examples of equations that use both division and subtraction and have a solution of -1.

33. Chef Boyardee has made 26 2/3 cups of ravioli for 40 of his friends. He wants to give each friend 3/5 of a cup. Does he have enough ravioli for everybody? If yes, then how much extra does he have? If no, then how much more does he need?

$\frac{40}{1} \cdot \frac{3}{5} = 24$ CUPS NEEDED $\quad 26\frac{2}{3}$ CUPS MADE

YES THERE IS ENOUGH

$2\frac{2}{3}$ CUPS EXTRA

34. What is the reciprocal of 5 1/3 ?

$5\frac{1}{3} = \frac{16}{3}$ $\quad$ RECIPROCAL = $\frac{3}{16}$

35. Describe the difference between the multiplicative inverse and the reciprocal.

THEY'RE THE SAME THING

36. What is the constant term in the expression $5x^2+4x+8$

8

37. Write the word phrase for the equation $3x + 8 = 16 \div x$

eight more than three times a number x is equal to the quotient of sixteen and a number x

38. Write the perfect squares for the numbers 1-15.

39. Prove that .23 is a Rational number.

$.23 = \frac{23}{100}$ ← RATIO (USING INTEGERS IN NUMERATOR AND DENOMINATOR)

40. 2 DVD's cost Joe $18. 3DVD's costs $27 dollars. 4 DVD's cost $36. 5 DVD's cost $45.

-Create a chart of the data labeling the number of DVD's as x and the cost as y.

-Use the chart to create an equation that represents the data.

-Use the equation to predict how much 17 DVD's would cost.

x	y
2	18
3	27
4	36
5	45

$y = 9x$

$y = 9(17)$

$y = 153$

$153 for 18 DVD'S