Algebra 1

Name_____

Unit 1 Study Guide

Date_____ Period____

Evaluate each expression.

1) $9 \div (6-3)$

2) $(13+5) \div 3$

3) $5^2 + 4$

4) $4+6+2$

5) $(6-1) \times 3$

6) $6 - 8 \div 4 + 3$

7) $(15 \div 5)^2 - 4$

8) $(5+2)^2 - 5$

9) $6+6+1+2$

10) $6+3 \times 6-4-6$

11) $6 \times 2 - 6 \div (2+1)$

12) $10 \div (6+5-3-3)$

Write each as an algebraic expression.

13) 10 times x

14) 7 squared

15) the product of 3 and n

16) x less than 18

17) the difference of y and 9

18) the quotient of 40 and 5

19) 22 less than 28

20) 6 less than 24

21) the sum of 9 and 11

22) the quotient of 80 and c

23) twice m

24) the difference of n and 3

25) n decreased by 6

26) 11 times 5

27) 8 times y

28) 19 less than n

29) the product of 7 and n

30) the sum of n and 10

31) n less than 12

32) q cubed

33) the quotient of c and 2

34) the difference of 14 and p

Algebra 1

Unit 1 Study Guide Contd.

Evaluate each function.

1) $p(x) = -x$; Find $p(10)$

2) $f(x) = 4x - 4$; Find $f(-5)$

3) $w(n) = 4n$; Find $w(-7)$

4) $g(x) = x + 4$; Find $g(-1)$

5) $g(a) = -a - 3$; Find $g(-2)$

6) $h(n) = -2n - 2$; Find $h(6)$

7) $w(n) = n - 5$; Find $w(-4)$

8) $g(n) = 2n + 3$; Find $g(-5)$

9) $p(x) = x + 3$; Find $p(-7)$

10) $h(n) = n - 2$; Find $h(3)$

Perform the indicated operation.

11) $h(a) = a^3 + 5$
$g(a) = -4a - 4$
Find $(h + g)(a)$

12) $f(x) = 2x - 3$
$g(x) = 2x - 2$
Find (2f)(x)

13) $h(x) = 2x - 4$
$g(x) = -3x - 5$
Find $(h - g)(x)$

14) $g(a) = 4a$
$h(a) = a^2 + 5a$
Find $(g - h)(a)$

15) $g(x) = 4x + 1$
$f(x) = 2x + 1$
Find $(g + f)(-8)$

16) $g(a) = 2a - 4$
$f(a) = 3a + 5$
Find $(g + f)(7)$

17) $g(x) = 4x - 1$
$h(x) = x - 4$
Find $(g + h)(-6)$

18) $g(t) = t + 3$
$f(t) = -3t + 2$
Find $(g - f)(-5)$

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

Study Guide

1. Make an input-output table for the function $y = 2x + 4$. Use x-values of 1, 2, 3, 4, and 5.

2. For which value of x is the relation *not* a function?
   $\{(0, 1), (x, 0), (3, 5), (2, 6)\}$
   a. 1 b. 3 c. 4 d. 6

Write a function rule for the input-output table.

3.

Input x	2	3	4	5
Output y	10	15	20	25

4. Find the range of the function.

Input	Output
1	11
9	6
4	5

5. Decide whether the information defines a function. If it does, state the domain of the function.

Input	a	b	c	d
Output	0	1	0	1

6. Does the input-output table represent a function? If it does represent a function, list the domain and range. If it does not represent a function, explain why.

Input	1	2	3	4
Output	6	7	8	9

7. Decide whether the information defines a function. If it does, state the domain of the function.

Input	a	b	c	d
Output	0	1	2	1

8. Make an input-output table to represent the function. Use 1, 2, 3, 4, and 5 as the domain.
   $y = 3x + 9$

9. Make an input-output table to represent the function. Use 0, 1, 2, and 3 as the domain.
   $y = 8 + 6x$

Determine whether the relation is a function.

10. $\{(-4, 1), (0, 0), (4, 0), (0, 4)\}$

11. A scuba diver exploring a steep shoreline dives down to a certain depth and returns to the surface. The dive can be modeled by $s(t) = 12t - t^2$.

    a. What will the diver's depth be after 8 minutes?

    b. After 10 minutes?