

Algebra I
Function Notation Worksheet

Name: _____
Hour: _____
Date: _____

1. Evaluate the following expressions given the functions below:

$$g(x) = -3x + 1 \quad f(x) = x^2 + 7 \quad h(x) = \frac{12}{x} \quad j(x) = 2x + 9$$

a. $g(10) =$

b. $f(3) =$

c. $h(-2) =$

d. $j(7) =$

e. $h(a)$

f. Find x if $g(x) = 16$

g. Find x if $h(x) = -2$

h. Find x if $f(x) = 23$

i. CHALLENGE! (in other words, optional)
 $g(b+c)$

j. CHALLENGE! (also optional)
 $f(h(x))$

2. Translate the following statements into coordinate points:

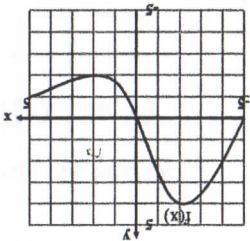
a. $f(-1) = 1$

b. $h(2) = 7$

c. $g(1) = -1$

d. $k(3) = 9$

3. Given this graph of the function $f(x)$:



Find:

a. $f(-4) =$

b. $f(0) =$

c. $f(3) =$

d. $f(-5) =$

e. x when $f(x) = 2$

f. x when $f(x) = 0$

Algebra I
Function Notation Worksheet

Name: _____
Hour: _____
Date: _____

1. Evaluate the following expressions given the functions below:

$$g(x) = -3x + 1 \quad f(x) = x^2 + 7 \quad h(x) = \frac{12}{x} \quad j(x) = 2x + 9$$

a. $g(10) =$

b. $f(3) =$

c. $h(-2) =$

d. $j(7) =$

e. $h(a) =$

f. Find x if $g(x) = 16$

g. Find x if $h(x) = -2$

h. Find x if $f(x) = 23$

i. CHALLENGE! (in other words, optional) $g(b+c)$

j. CHALLENGE! (also optional) $f(h(x))$

2. Translate the following statements into coordinate points:

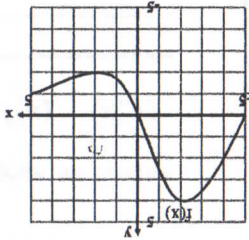
a. $f(-1) = 1$

b. $h(2) = 7$

c. $g(1) = -1$

d. $k(3) = 9$

3. Given this graph of the function $f(x)$:



Find:

a. $f(-4) =$

b. $f(0) =$

c. $f(3) =$

d. $f(-5) =$

e. x when $f(x) = 2$

f. x when $f(x) = 0$

Completing T-Tables

A T-table is a table used to determine values for x and y that will make an equation true. To complete a T-table, rewrite the equation so that y equals an expression. Then substitute values for x and solve for y . (It is also possible to rewrite the equation so that x equals an expression. Then substitute values for y and solve for x .)

Directions: Complete the T-tables. Find the missing values in the Answer Bank on the next page and write the letter of each value in the corresponding blank in the table. When you have finished, go down each table line by line and write the letters in order to complete the statement at the end of the activity. The first table is completed for you. Some answers will be used more than once.

1. $y = 3x - 1$

X	Y
-2	-7
1	2
0	1
$\frac{5}{3}$	0

4. $y = \frac{2}{3}x$

X	Y
10	
-1	$-\frac{2}{3}$
6	3
-10	

7. $2x = y + 1$

X	Y
1	1
-3	
4	7
9	

2. $y = x$

X	Y
-3	
4	
1	1
-1	-1

5. $y = \frac{4}{x} - 3$

X	Y
8	
0	-3
-8	
1	$-2\frac{3}{4}$

8. $x + y = 10$

X	Y
0	10
-1	11
14	
5	

3. $y = x^2$

X	Y
3	
-2	4
-1	1
$\frac{2}{3}$	

6. $3y = 4x + 1$

X	Y
$12\frac{1}{2}$	
0	$3\frac{1}{3}$
-1	
-4	-5

9. $xy = 4$

X	Y
$-\frac{4}{3}$	
1	4
2	
$\frac{1}{3}$	

Completing T-Tables

10. $y = x^2$

X	Y
-1	-1
-2	
8	
0	0

11. $y = \frac{x}{2}$

X	Y
2	
3	1
3	$\frac{3}{2}$
$\frac{2}{3}$	
2	$\frac{1}{2}$

14. $-2x + y = 10$

X	Y
$3\frac{1}{2}$	
-6	-2
11	
4	18

13. $3x + y = 0$

X	Y
3	
$\frac{3}{5}$	
2	-6
-2	

12. $y = -x + 5$

X	Y
0	5
2	
3	
6	

Y	-8	I	2	E	-5	O	4	A	17	R	$\frac{1}{4}$
B	-4	S	$\frac{1}{2}$	W	$3\frac{2}{3}$	C	-3	R	8	T	-1
R	3	M	9	N	$3\frac{2}{3}$	L	5				

Answer Bank

It is easier to _____

_____ a function of x .

What Did the Baby Porcupine Say When It Backed Into a Cactus?



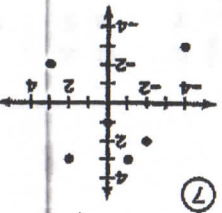
Determine which of the relations below are functions. Find the number of each relation that is a function at the bottom of the page and cross out the letter below it. When you finish, the answer to the title question will remain.

- 1 $\{(-2, 7), (-1, 5), (0, 3), (1, 1), (2, 1)\}$
- 2 $\{(-7, 20), (3, 5), (0, 5), (-2, 0), (6, -4), (-6, -9), (4, 4)\}$
- 3 $\{(4, 8), (-3, -2), (9, 6), (2, -1), (-4, -5), (2, 7), (-8, 0)\}$

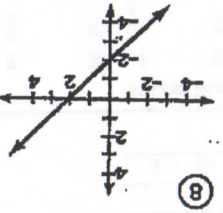
4	x	y
0	-19	
1	-12	
2	-4	
3	3	
4	13	
5	27	

5	x	y
-5	8	
-3	8	
-1	-2	
1	-2	
3	11	
5	23	

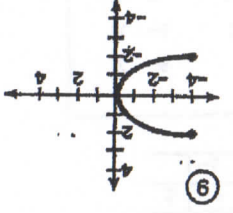
6	x	y
-2	-7	
-2	5	
0	-16	
2	0	
2	6	



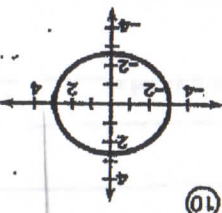
7



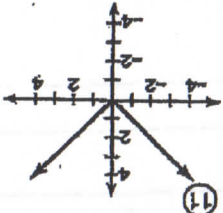
8



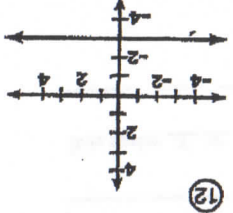
9



10



11



12

5	F	12	O	H	A	S	I	M	T	O	P	A	D
10	7	1	3	9	11	2	4	6	8				

OBJECTIVE 1-4: To determine whether or not a relation is a function.

What Did They Call the Duck Who Became a Test Pilot?

Follow the directions given for each section. Cross out each box in the rectangle below that contains a correct answer. When you finish, print the letters from the remaining boxes in the spaces at the bottom of the page.

- 1 $f(x) = 2x - 5$ A. $f(6)$ B. $f(-2)$
- 2 $f(x) = x^2 - 4$ A. $f(12)$ B. $f(-2)$
- 3 $g(x) = x^2 - 7x + 1$ A. $g(3)$ B. $g(0)$
- 4 $h(x) = \frac{x^2 + x - 6}{x + 3}$ A. $h(4)$ B. $h(-1)$

II Find the range of each function for the given domain.

- 5 $f(x) = 3x + 2$ $D = \{-2, 0, 2\}$
- 6 $g(x) = 9 - 5x$ $D = \{-3, -1, 1\}$
- 7 $f(x) = 2x^2 - 1$ $D = \{5, 1, -4\}$
- 8 $h(x) = x^2 - 8x + 3$ $D = \{1, 0, -1\}$
- 9 $f(t) = \frac{t^2 + 4t}{t - 6}$ $D = \{4, 0, -4\}$
- 10 $g(n) = -n^2 + 2n + 3$ $D = \{-2, 1, 4\}$

SK	Y	S	AF	E	IL	LY	{49, 1, 31}	0	$\frac{Z}{1}$	{49, -1, 9}	{-16, 0}	7	{-16, 8, -2}
BE	ER	ST	QU	IT	I	A	{24, 14, 4}	{-5, 0}	{-5, 4}	$-\frac{2}{3}$	$-\frac{1}{3}$	-3	{24, 14, -7}
DU	CK	MB	IN	H	ER	UP	{-4, 7, 12}	140	{-4, 2, 8}	{-4, 3, 12}	{-4, 2, -1}		1

176 ALGEBRA WITH PIZZAZZ © Creative Publications
OBJECTIVE 1-6: To find values of a function; to find the range of a function for a given domain.

Algebra I
Practice- Functions

Name _____

Date _____ Period ____

1) Decide whether each of the following ordered pairs are solutions to the function $f(x) = x + 5$. Show all your work for full credit.

a) $(-3, 8)$ *NO*
 $-3 + 5 \neq 8$

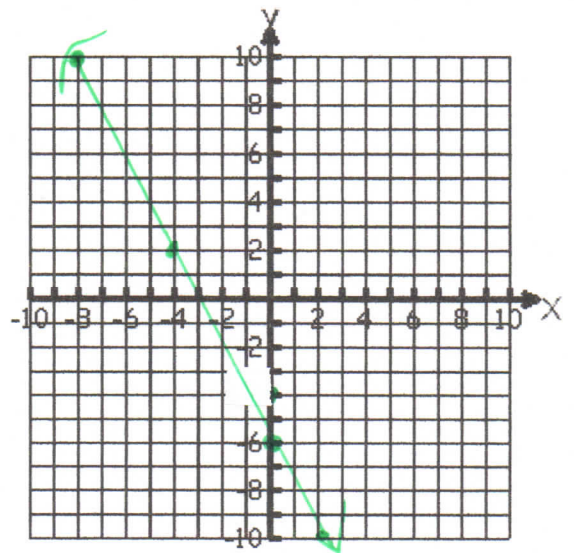
b) $(2, 7)$ *YES*
 $2 + 5 = 7$

c) $(0, -5)$ *NO*
 $-5 \neq 0 + 5$

d) $(5, 0)$ *NO*
 $0 \neq 5 + 5$

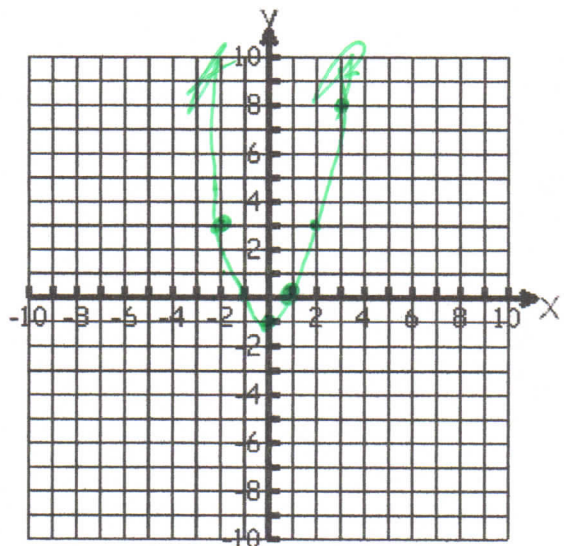
2) Use the table of values to graph the function.

x	$f(x) = -2(x+1)-4$	f(x)	(x, y)
-8	$-2(8+1)-4$	10	$(-8, 10)$
-4	$-2(-4+1)-4$	2	$(-4, 2)$
0	$-2(0+1)-4$	-6	$(0, -6)$
2	$-2(2+1)-4$	-10	$(2, -10)$
5	$-2(5+1)-4$	-16	



3) Evaluate the function for $D: \{-2, -1, 0, 3, 5\}$. Then graph the function.

x	$g(x) = x^2 - 1$	g(x)	(x, y)
-2	$(-2)^2 - 1$	3	$(-2, 3)$
1	$(1)^2 - 1$	0	$(1, 0)$
0	$(0)^2 - 1$	-1	$(0, -1)$
3	$9 - 1$	8	$(3, 8)$
5	$25 - 1$	24	$(5, 24)$
2	$2^2 - 1$	3	
-1	$(-1)^2 - 1$	0	$(-1, 0)$



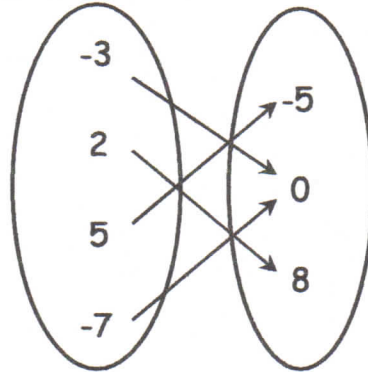
List the ordered pairs, domain, and range for the given functions

4)

x	f(x)
-1	-1
3	4
4	-2
5	10

OP: $(-1, -1), (3, 4), (4, -2), (5, 10)$
 D: $\{-1, 3, 4, 5\}$ R: $\{-1, 4, -2, 10\}$

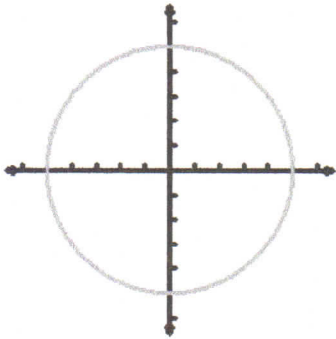
5)



OP: $(-3, 0), (2, 8), (5, -5), (-7, 0)$
 D: $\{-3, 2, 5, -7\}$ R: $\{-5, 0, 8\}$

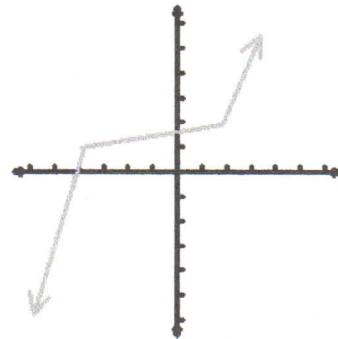
Decide whether the following relations are functions. Explain your answer.

6)



Yes or No: NO
 Explain: FAILS VERT LINE TEST

7)



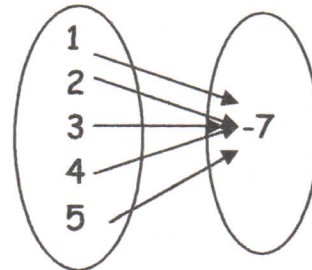
Yes or No: YES
 Explain: PASSES TEST

8)

x	f(x)
-1	-10
3	14
4	-32
5	-10
3	-5

Yes or No: NO
 Explain: 3 goes to 14 and -5

9)



Yes or No: YES
 Explain: Each input has one output

Algebra I
Function Notation Worksheet

Name: _____
Hour: _____ Date: _____

1. Evaluate the following expressions given the functions below:

$$g(x) = -3x + 1 \quad f(x) = x^2 + 7 \quad h(x) = \frac{12}{x} \quad j(x) = 2x + 9$$

a. $g(10) = -3(10) + 1 = -29$

b. $f(3) = 3^2 + 7 = 16$

c. $h(-2) = \frac{12}{-2} = -6$

d. $j(7) = 14 + 9 = 23$

e. $h(a) = \frac{12}{a}$

f. Find x if $g(x) = 16$ $16 = -3x + 1$ $-3x = -15$ $x = 5$

g. Find x if $h(x) = -2$ $-2 = \frac{12}{x} \cdot x$ $-2x = 12$ $x = -6$

E.C. h. Find x if $f(x) = 23$ $23 = x^2 + 7$ $x^2 = 16$ $x = \pm 4$

i. CHALLENGE! (in other words, optional)

$$g(b+c) = -3(b+c) + 1 = -3b - 3c + 1$$

j. CHALLENGE! (also optional)

$$f(h(x)) = \left(\frac{12}{x}\right)^2 = \frac{144}{x^2}$$

2. Translate the following statements into coordinate points:

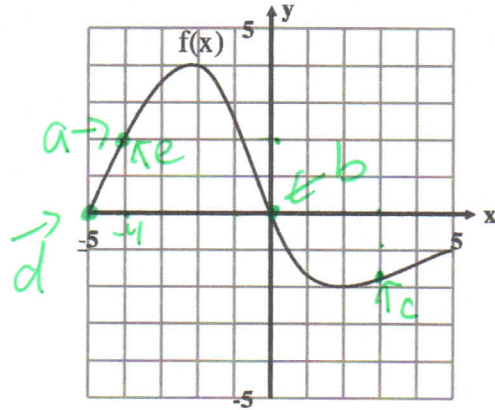
a. $f(-1) = 1$ $(-1, 1)$

b. $h(2) = 7$ $(2, 7)$

c. $g(1) = -1$ $(1, -1)$

d. $k(3) = 9$

~~3.~~ 3. Given this graph of the function $f(x)$:



Find:

a. $f(-4) = 2$

b. $f(0) = 0$

c. $f(3) \approx -1.8$

d. $f(-5) = 0$

e. x when $f(x) = 2$
 -4

f. x when $f(x) = 0$
 0