Name _____ Date _____

Function Notation: Evaluating and Interpreting f(x)

Directions: Each question uses function notation with a rule, a table or a real-world situation. Read each one carefully before you answer.

1. The function f is defined by $f(x) = 2x^2 - x$. Match each expression to its value. Write the letter of the matching answer on each line.

1. _____ $f(-3)$
2. _____ $f(-1)$
3. _____ $f(2)$
4. _____ $f(4)$

A. 1
B. 3
C. 28
D. 21
E. 6
F. -15
G. 60

2. Ramon was asked to find $g(-4)$ for $g(x) = x^2 + 3x - 1$. Here is his work.

$g(-4) = -4^2 + 3(-4) - 1 = -16 - 12 - 1 = -29$

Which statement explains his mistake?

A. He should have found g times -4 instead of replacing x with -4.
B. He should have added 1 at the end instead of subtracting it.
C. He should have multiplied 3 by 4 instead of by -4.
D. He wrote -4^2 and got -16, but the input needs parentheses: $(-4)^2 = 16$.

3. If $p(x) = 7x - 12$, what value of x makes $p(x) = 23$?

_____

4. For $h(x) = x^2 - 6$, which values of x make $h(x) = 10$?

A. $x = -4$ or $x = 4$
B. $x = -2$ or $x = 2$
C. $x = 94$
D. $x = 4$ only

Every input and output of the function g

x	g(x)
-2	6
-1	3
0	2
1	3
3	11

5. The table lists every input and output of the function g. For which values of x is $g(x) = 3$? Select the two correct values.

☐ A. $x = -1$ ☐ B. $x = 3$ ☐ C. $x = 1$ ☐ D. $x = 11$

6. Let B(h) be the percent of charge left in a phone's battery h hours after it is unplugged. What does $B(3) = 64$ mean?

A. With 64 percent of its charge left, the battery will last 3 more hours.

B. During its first 3 hours unplugged, the phone uses 64 percent of its charge.

C. After 3 hours unplugged, the battery has 64 percent of its charge left.

D. After 64 hours unplugged, the battery has 3 percent of its charge left.

7. An oven is turned on, and T(m) is its temperature in degrees Fahrenheit m minutes later. Match each statement to what it means.

Write the letter of the matching answer on each line.

1. _____ $T(0) = 70$
2. _____ $T(10) = 250$
3. _____ $T(25) - T(10) = 60$
4. _____ $T(m) = 350$

A. After 10 minutes, the oven is at 250°F.

B. Its solutions are the times when the oven is at 350°F.

C. At the moment it is turned on, the oven is at 70°F.

D. At minute 25, the oven is at 60°F.

E. From minute 10 to minute 25, the oven warms up by 60°F.

F. After 250 minutes, the oven is at 10°F.

G. The oven takes 350 minutes to heat up.

8. At a pick-your-own orchard, the total cost in dollars of picking n pounds of apples is $C(n) = 2.5n + 4$, which includes a $4 entry fee. Ana's total cost was $19. How many pounds of apples did she pick?

_____ pounds