Name:

All the questions on this page refer to the following four functions:

m(a) = a-2 **y(h) = h/2**

b(y) = 3y **q(a,b) = a+2b**

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1. What is the value of b(0)? (circle one)

3 0 30 33

---

2. What is the value of m(20)? (circle one)

15 16 17 18

---

3. What is the value of y(6)? (circle one)

1 2 3 Can't be evaluated

---

4. What is the value of q(2,3)? (circle one)

5 7 24 8

---

5. What is the value of m(1+3)? (circle one)

2 3 4 5

---

6. What is the value of q(4, 5)? (circle one)

14 29 44 19

---

7. What is the value of b(y(4))? (circle one)

6 12 24 8

---

8. What is the value of q(b(1), m(3))? (circle one)

5 11 18 Can't be evaluated

Name:

9. The formula below explains the relationship between the distance a car has traveled and the number of hours that have passed. Can you explain this relationship in your own words?

$$d(h) = 65h$$

_____

_____

_____

10. The table below shows the relationship between a the size of a sandwich and the cost of the sandwich. Can you explain this relationship in your own words?

Sandwich Size	Cost(weight)
6 inches	$4
12 inches	$8
18 inches	$12

_____

_____

_____

11. The formula below shows the height of a ball dropped from the top of a tall building. Can you describe the relationship in your own words?

$$h(t) = 480-16t$$

_____

_____

_____

12. The table below shows the amount of money raised by selling t-shirts at a fundraiser. Can you describe the relationship in your own words?

Shirts Sold	Money Raised
20 shirts	$100
25 shirts	$125
30 shirts	$150

_____

_____

_____

Name:

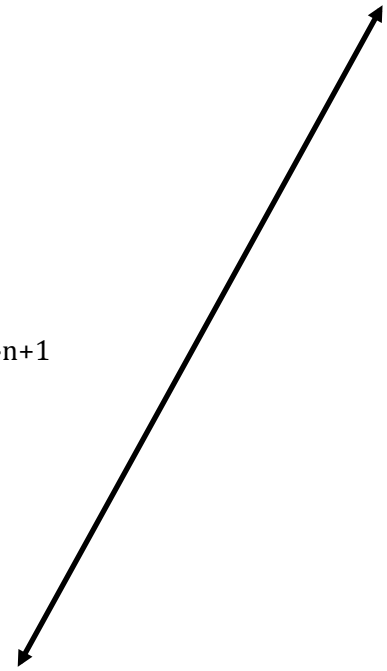
Match each of the formulas below with the corresponding table. (One of the matches has been done for you.)

$m(n) = n^2 + 3$

n	$m(n)$
10	0
11	-2
12	-4

$m(n) = n^2 + n$

n	$m(n)$
-4	16
-6	36
-8	64



$m(n) = 4n+1$

n	$m(n)$
0	3
1	4
2	7

$m(n) = n^2$

n	$m(n)$
5	30
6	42
7	56

$m(n) = 20 - 2n$

n	$m(n)$
2	9
4	17
6	25

Name:

13. The table below shows a relationship between values of x and $g(x)$:

x	2	3	4	5	6
***g*(x)**	7	12	19	28	39

a. What are the domain and range of g?

g : _____ → _____

b. Can you write two examples, using this function with 7 and 8 as inputs?

$g(7)$	
$g(8)$	

c. Which of the following equations describes the relationship between x and g(x) in the table? (circle one)

$g(x) = 4x+1$ $g(x) = 5x^2-2$ $g(x) = x^2+3$ $g(x) = x^2+8$

14. Ashley has one more than twice as many puppies as Melissa. Let *m* stand for the number of puppies Melissa has. The function *a*(m) represents the number of puppies Ashley has.

a. What are the domain and range of a?

a : _____ → _____

b. Can you write two examples using this function? (you can choose your own inputs)

$a(\ \ )$	
$a(\ \ )$	

c. Which of the following equations describes the relationship between m and a(m)? (circle one)

$a(m) = ½m + 1$ $a(m) = 1 + ½m$ $a(m) = 1m + 2$ $a(m) = 2m+1$

15. A school has twice as many girls as boys. Write a function *b*(g) that describes the number of boys in relation to the number of girls *g*.

a. What are the domain and range of b?

b : _____ → _____

b. Can you write two examples using this function?

c. Write the function b(g), which represents the number of boys at a school with g *girls.*

$b(g)$ = _____

Name:

16. Asha is making bumper sticker to run for office. The total cost is a one-time fee of $20 to have the stickers designed, plus $0.50 per printed sticker. Write an equation that Asha can use to determine the total cost *C*(s), in dollars, to make *s* stickers.

a. What are the domain and range of C?

C : _____ → _____

b. Can you write two examples using this function?

c. Write the function `C(s)`, that represents the cost to make s stickers.

C(s) = _____

17. A principal wants to take the entire school on a field trip. The school has enough vans to transport 20 students, and will have to rent buses to take the rest. Each of the buses can carry up to 40 students. If *b* represents the buses the principal orders, write a function s(*b*), which shows the number of students *s* that can be transported if the school orders *b* buses in addition to their vans.

a. What are the domain and range of s?

s : _____ → _____

b. Can you write two examples using this function?

c. Write the function `s(b)`, that represents the number of students that can be transported on vans and buses.

s(b) = _____

18. Gabrielle and Damoni are frosting cakes for a bake sale. Gabrielle can frost a cupcake in half the time it takes Damoni. A function g(*d*) represents the time it takes Gabrielle to frost a cupcake, compared to Damoni.

a. What are the domain and range of g?

g : _____ → _____

b. Can you write two examples using this function?

c. Which of the following equations describes the relationship between d and g(*d*)*? (circle one)*

g(d) = 2 × d *g*(d) = 2 ÷ d *g*(d) = d - 2 *g*(d) = d ÷ 2

Name:

19. A bag of marbles has four times as many blue marbles as red marbles. Write a function *r*(b), which describes the number of red marbles as a function of how many blue marbles there are.

a. What are the domain and range of r?

r : _____ → _____

b. Can you write two examples using this function?

c. *Write the function* `r(b),` *which represents the number of red marbles in a bag with* b *blue ones*.

r(b) = _____

20. A train moves 50mph faster than twice the speed of the world's fastest human. Let *h* represent the speed of the runner. A function t(*h*) represents the speed of the train, in relation to the speed of the runner.

a. What are the domain and range of t?

t : _____ → _____

b. Can you write two examples using this function?

c. Which of the following equations describes the relationship between d and t*? (circle one)*

t(h)= 50 - 2h *t*(h)= 50h + 2 *t*(h)= 2h - 50 *t*(h)= 2h + 50

21. The total for a phone bill, *t*(m), starts at $19, plus an additional $0.25 per minute *m* of use.

a. What are the domain and range of t?

domain : _____ range: _____

b. Make a table for the function t(m), that shows how the total bill is related to the number of minutes of use.

c. Which of the following equations can be used to determine the total monthly bill, t, for m minutes of use? (circle one)

t(m) = 0.25m + 19 *t*(m)=0.25m – 19 *t*(m) = 19m + 0.25 *t*(m) = 19m - 0.25