

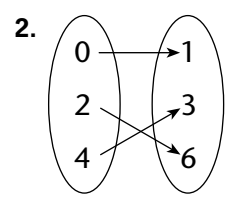
NAME _____

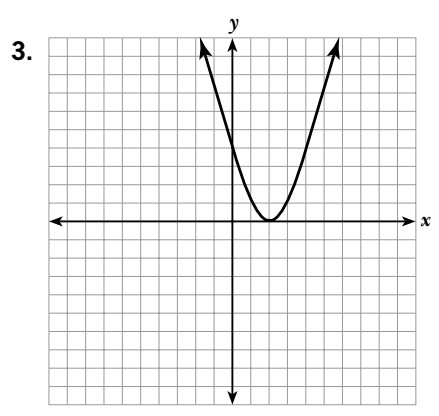
DATE _____

Module Test B Module 9

1. Find the domain and range of the relation. $T = \{(4, -5), (3, 6), (2, 4), (-4, 9), (2, 1)\}$

Is the relation a function? Yes or No.





4. Find the domain and range of the relation given by the equation $x = y - 3$.

5. The relation given by the equation $y = 2x + 2$ has a domain of $\{-4, 0, 4\}$. Find its range.

Use the set of ordered pairs $\{(2, 1), (-5, 3), (6, 2), (3, 4)\}$ for questions 6 and 7.

6. What output is associated with an input of 3?

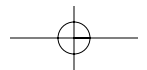
7. What input is associated with an output of 2?

8. Evaluate $f(1)$ if $f(x) = x^2 + x + 4$. _____

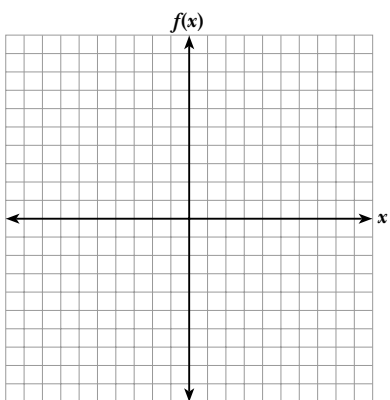
9. Evaluate $g(3)$ if $g(x) = \sqrt{x + 1} - x$. _____

10. Evaluate $h(-1)$ if $h(x) = \frac{9x}{x + 4}$. _____

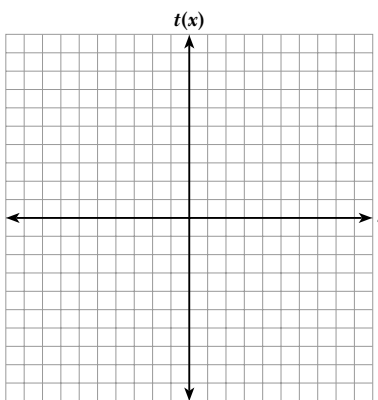
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11. Use the graph of $f(x)$ to find $f(0)$.



12. Use the graph of $t(x)$ to find $t(3)$.



Write a function for the pattern shown in each table.

13.

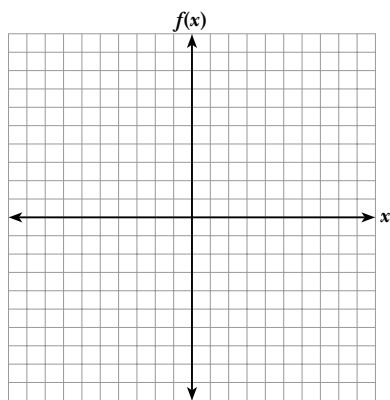
x	$f(x)$
0	2
1	3
2	4
3	5

14.

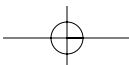
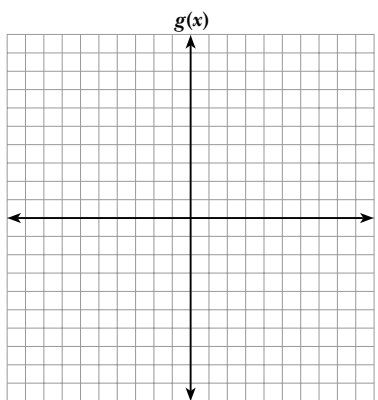
x	$g(x)$
-1	-2
1	2
3	6
5	10

Graph each function.

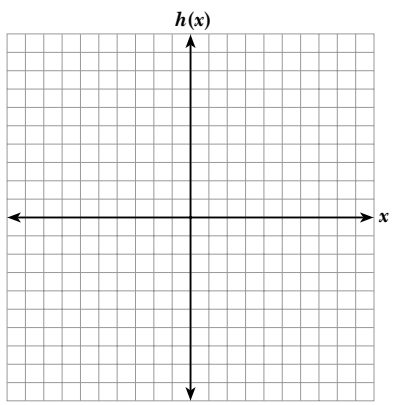
15. $f(x) = x - 2$



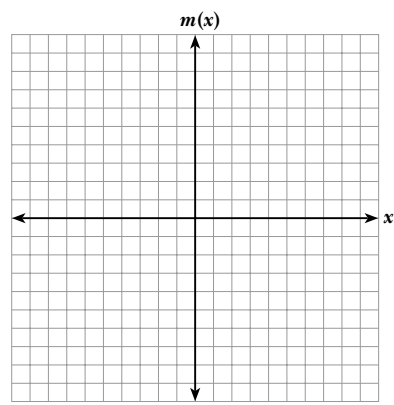
16. $g(x) = \frac{3}{4}x - 2$



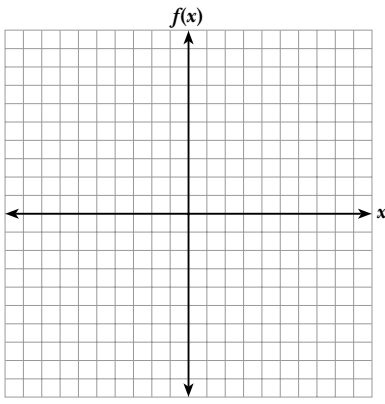
17. $h(x) = |x| + 1$



18. $m(x) = |x - 2| + 3$



19. Graph. $f(x) = \begin{cases} x - 3, & x > 0 \\ -x + 2, & x \leq 0 \end{cases}$



20. Evaluate $f(g(-4))$ if $f(x) = x - 1$ and $g(x) = x^2 - 3$. _____

21. Evaluate $g(f(-1))$ if $f(x) = 2x^2$ and $g(x) = -\frac{2}{x}$. _____

22. Find $(f \circ g)(x)$ if $f(x) = x^2 - 3$ and $g(x) = -2x$. _____

23. Find $g(f(x))$ if $f(x) = 2x$ and $g(x) = 4x^2 - 1$. _____

24. The charge for a one-hour rental is \$25. The charge for a two-hour rental is \$45. The rental charge is a linear function. Write the equation for this function and use this function to find the cost of a 3 hour rental.

25. Which of the following is **not** a function?

- A. $x = 3$
- B. $y = |x|$
- C. $y = x^2$
- D. $y = (x + 2)^2$

26. Find $f(-1)$ if $f(x) = x^2 + 3x + 5$.

- A. 9
- B. 1
- C. 3
- D. 7

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27. Answer the following questions in the space provided. Show all work.
Be sure to label your responses (A), (B), and (C).

A. Graph $f(x)$ and $g(x)$ if $f(x) = 2x + 5$
and $g(x) = \frac{x-5}{2}$.

B. Find $f(g(x))$ and $(g(f(x)))$.

C. Are $f(x)$ and $g(x)$ inverses? Explain.

