NAME _____ DATE _____

Module Test A

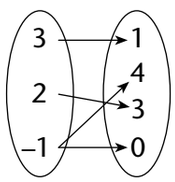
Module 9

1. Find the domain and range of the relation. $T = \{(-3, 4), (8, 7), (4, 5), (-8, 6), (2, 5)\}$

_____

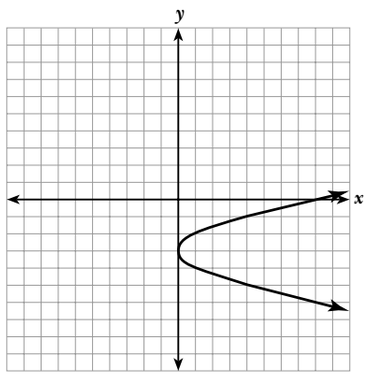
Is the relation a function? Yes or No.

2.



_____

3.



_____

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

_____

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

_____

Use the set of ordered pairs {(2, 3), (5, 6), (–1, 8), (3, 5)} for questions 6 and 7.

6. What output is associated with an input of 5?

_____

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

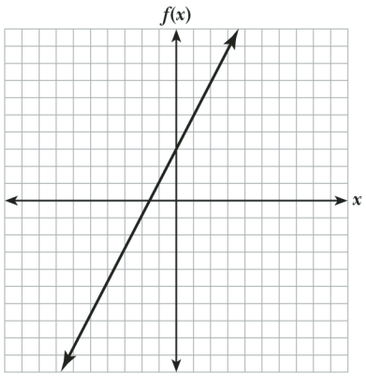
_____

8. Evaluate $f(1)$ if $f(x) = x^2 + 4x - 3$. _____

9. Evaluate $g(4)$ if $g(x) = \sqrt{x + 5} + 3x$. _____

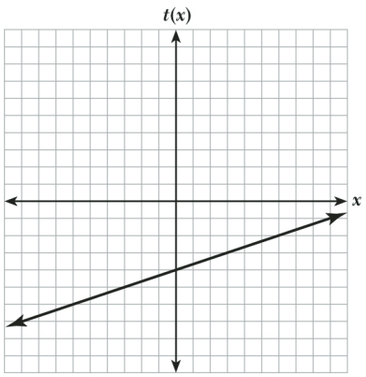
10. Evaluate $h(-2)$ if $h(x) = \frac{2x}{(x + 3)}$. _____

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



3

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



–3

Write a function for the pattern shown in each table.

13.

x	f(x)
0	0
1	–3
2	–6
3	–9

$f(x) = -3x$

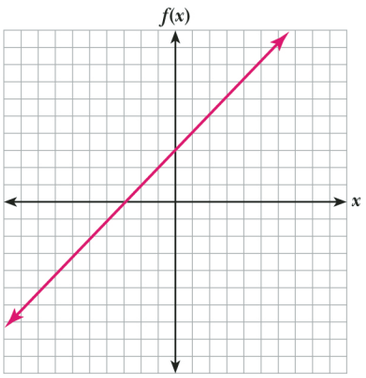
14.

x	g(x)
0	0
1	4
2	8
3	12

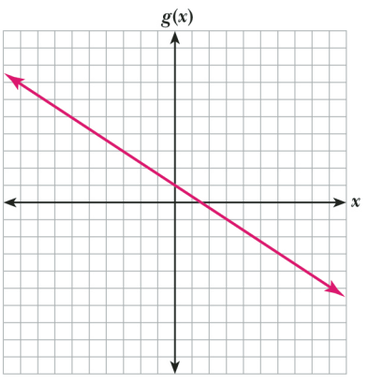
$g(x) = 4x$

Graph each function.

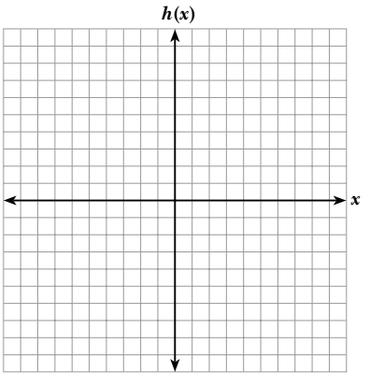
15. $f(x) = x + 3$



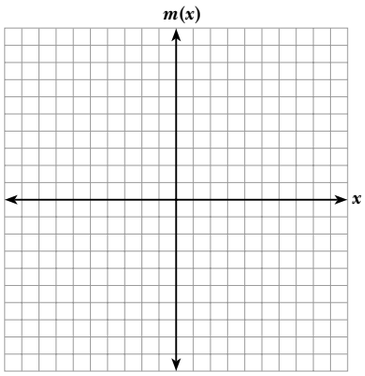
16. $g(x) = -\frac{2}{3}x + 1$



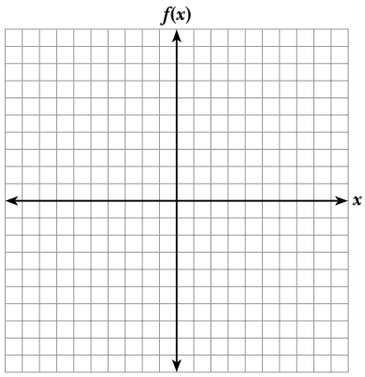
17. $h(x) = |x| + 3$



18. $m(x) = |x + 3| - 1$



19. Graph $f(x) = \begin{cases} x + 1, x > 0 \\ -x + 1, x \leq 0 \end{cases}$



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

21. Evaluate $g(f(3))$ if $f(x) = x^2$ and $g(x) = -\frac{3}{x}$. _____

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

23. Find $g(f(x))$ if $f(x) = 2x + 5$ and $g(x) = 4x - 1$. _____

24. The charge for a one-hour rental is $65. The charge for a two-hour rental is $105. 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?

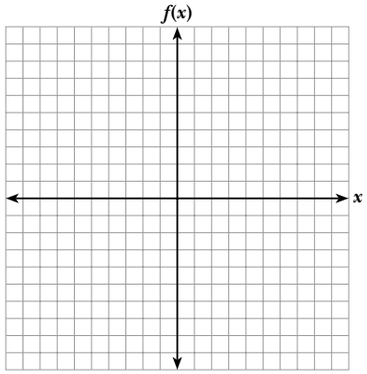
A. $y = 3$ **B.** $y = |x|$
C. $y = x^2$ **D.** $x = y^2$

26. Find $f(-3)$ if $f(x) = x^2 + x - 4$.

A. –16 **B.** 2 **C.** 8 **D.** –10

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 $f(x) = 3x + 4$ and $g(x) = \frac{x - 4}{3}$.



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

_____

_____

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

_____

_____