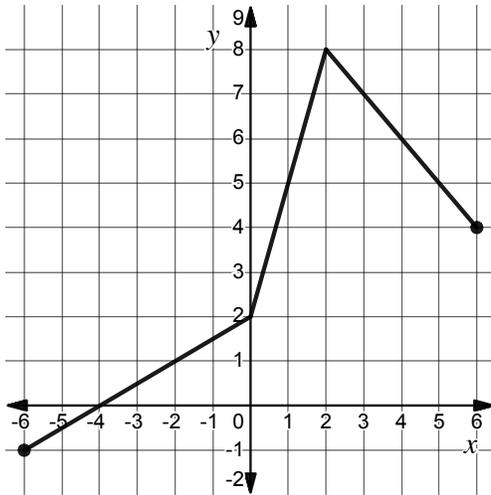


## HW 5-3

NAME \_\_\_\_\_

1. The function  $B$  gives the temperature of Boston, Massachusetts,  $B(t)$ , on a particular day, where  $t$  is measured in hours after midnight. Is  $B$  a one-to-one function? How do you know?

2. The graph of  $y = f(x)$  is shown below on the  $xy$ -plane for  $-6 \leq x \leq 6$ . Is  $f$  a one-to-one function on its domain? Explain.



3. Find the inverse of  $y = \sqrt{x + 3}$  and state its domain and range.

4.

Let  $f(x) = \frac{1}{x+5}$ . Find the domain and range of  $f^{-1}$ . Is it possible to do this without finding the expression for  $f^{-1}$ ? Explain.

5.

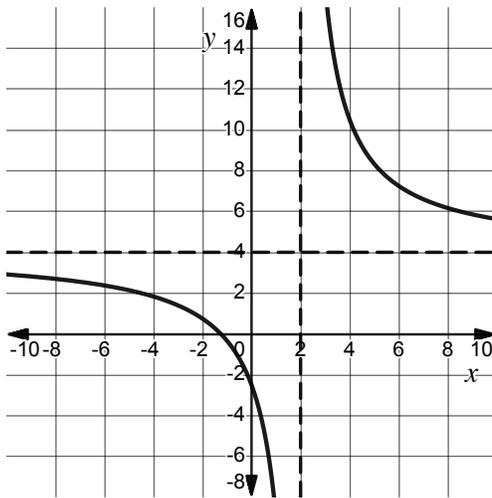
A table of selected values is given for a one-to-one function  $g$ . At  $x = -5$ ,  $g$  has a vertical asymptote.

$x$	$g(x)$
-5	undefined
-2	-14
0	-11
3	-1
6	0

a. What is the  $y$ -intercept of  $g^{-1}$ ?

b. Write the equation for the horizontal asymptote of  $g^{-1}$ .

6. The graph of  $f(x) = \frac{4x + 5}{x - 2}$  is shown. Give the domain and range of  $f^{-1}$ .



7. Explain how you could restrict the domain of  $f(x) = -2(x - 4)^2 + 5$  so that it is a one-to-one function.

8. The graph of a function  $h$  is shown. Graph the inverse of  $h$  on the blank coordinate grid.

