

**Functions 6a – Inverse Functions**  
**Homework #5**

Name \_\_\_\_\_  
Per \_\_\_\_\_ Date \_\_\_\_\_

1. Use the graph of  $f$  below to evaluate each of the following. Notice: there is an open circle at the point  $(3,1)$  and a closed circle at  $(3,7)$ .

a.  $f(0) =$  \_\_\_\_\_

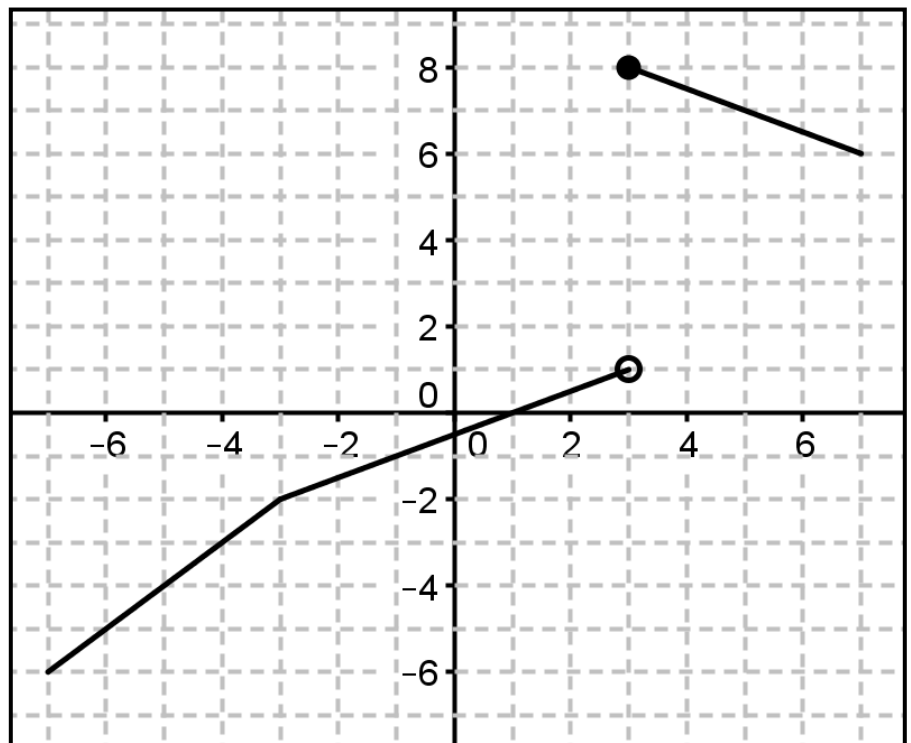
b.  $f^{-1}(0) =$  \_\_\_\_\_

c.  $f(3) =$  \_\_\_\_\_

d.  $f(-5) =$  \_\_\_\_\_

e.  $f^{-1}(-2) =$  \_\_\_\_\_

f.  $f^{-1}(8) =$  \_\_\_\_\_



2. Eric ran in the Chicago Marathon (a marathon is race that is 26.2 miles long). Let  $D(t)$  represent the distance he traveled in miles during the race as a function of time  $t$ , measured in hours from the time he started running.

Write a complete sentence to translate what each of the following statements mean in the context of the given situation.

A.  $D^{-1}(10) = 2$

B.  $D(5) = 3$

C.  $D^{-1}(26.2) = 6.5$

*continued...*

3. Functions  $f$  and  $g$  are given below with tables. Use these tables to evaluate the following.

$f(2) = \underline{\hspace{2cm}} \quad g^{-1}(8) = \underline{\hspace{2cm}} \quad f(-1) = \underline{\hspace{2cm}}$

$f^{-1}(-1) = \underline{\hspace{2cm}} \quad f^{-1}(-4) = \underline{\hspace{2cm}} \quad g^{-1}(3) = \underline{\hspace{2cm}}$

$g^{-1}(-2) = \underline{\hspace{2cm}} \quad g(3) = \underline{\hspace{2cm}} \quad f^{-1}(5) = \underline{\hspace{2cm}}$

$g(1) = \underline{\hspace{2cm}} \quad f(-4) = \underline{\hspace{2cm}} \quad g(8) = \underline{\hspace{2cm}}$

$x$	$f(x)$	$x$	$g(x)$
0	-4	8	-2
2	5	3	1
-1	0	-2	8
5	-1	5	3
-4	2	1	5