Standard 1 Practice Quiz C

MA 109

Print Your Name: Solutions ID:_____

Be sure that the ID number above is your correct 8-digit student ID number (without the leading 9). If this number is incorrect or not legible, it will take longer to process your score on this quiz.

This is practice for an in-class assessments on Standard 1. The only technology allowed during this quiz is a 4-function calculator. No notes or books may be used. This is an individual quiz, so any work done here must be entirely your own work.

Show all of your work. Your work will be graded on both accuracy and completeness, and partial credit is possible. You have 20 minutes to take this quiz.

Be sure to complete both the questions on this page and those on the back of this page.

1. Suppose $f(x) = 6x - 7$ and $g(x) = x^2 - 5$.
   a. What is $f(5)$? Write your answer in the answer box below.

input

$f(x) = 6x - 7$
$f(5) = 6(5) - 7$
$= 30 - 7$
$= 23$

Answer: 23

   b. Solve $g(x) = 2$. Write your answer in the answer box below.

output

$g(x) = 2$
$x^2 - 5 = 2$
$+5 \quad +5$
$\sqrt{x^2} = \sqrt{7}$
$x = \pm\sqrt{7}$

Answer: $\pm\sqrt{7}$

   c. What is the x-intercept of $f(x)$? Show all of your work. Write your answer as an **ordered pair** in the answer box below.

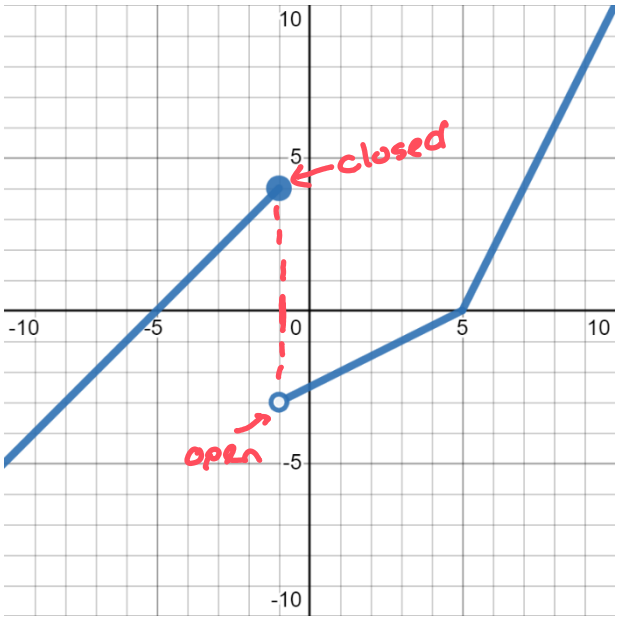
x-int on x-axis, where $y = 0$

$y = f(x)$
$0 = f(x)$
$0 = 6x - 7$
$+7 \quad +7$
$\frac{7}{6} = \frac{6x}{6}$
$\frac{7}{6} = x$

Answer: $\left(\frac{7}{6}, 0\right)$

2. Suppose $h(x)$ is given in the graph to the right and $g(x) = x^2 + 3$.

   a. What is $g(h(-1))$? Show your work, simplify your answer, and write your answer in the answer box below.



$h(-1) = 4$

$g(h(-1)) = g(4) = (4)^2 + 3$

$16 + 3$

19

Answer: 19

   b. What is $g(g(x))$? Show your work, **do NOT** simplify your answer, and write your answer in the answer box below.

$g(g(x)) = (x^2+3)^2 + 3$

Answer: $(x^2+3)^2 + 3$

3. Suppose $T(x)$ is given in the table to the right. What is $T^{-1}(5)$? Write your answer in the answer box below.

input to inverse is output to original

x	$T(x)$
-3	-2
-2	5
0	1
3	0
4	4
5	3

Answer: -2