Standard 3 Practice Quiz D

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 3. 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. Find the domain of each function below. Write your answer **using interval notation** in the answer box.

   a. $f(x) = \frac{x-1}{\sqrt{x+5}}$ square root in denominator

$x+5 > 0$

$-5 \quad -5$

$x > -5$

Answer: $(-5, \infty)$

   b. $g(x) = \frac{x+2}{6-x}$ ← variable in denominator

problem at: $6 - x = 0$

$-6 \quad -6$

$-x = -6$

$-1 \quad -1$

$x = 6$

domain is everything else

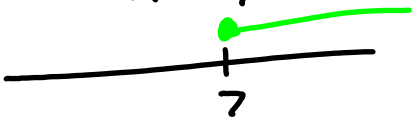
Answer: $(-\infty, 6) \cup (6, \infty)$

   c. $h(x) = \sqrt{x-7}$ square root

$x - 7 \geq 0$

$+7 \quad +7$

$x \geq 7$



Answer: $[7, \infty)$

2. Suppose $g(x)$ has the same graph as $f(x)$, but transformed as described below. Write the formula for $g(x)$ in terms of $f(x)$ for each transformation listed below.
    a. Suppose the graph of $g(x)$ is the same as the graph of $f(x)$, but **stretched vertically by 2**. Write the formula for $g(x)$ in terms of $f(x)$ in the answer box below.

Vertical : outside
stretch: multiply

Answer: $2f(x)$

    b. Suppose the graph of $g(x)$ is the same as the graph of $f(x)$, but **flipped horizontally over the y-axis**. Write the formula for $g(x)$ in terms of $f(x)$ in the answer box below.

horizontal : inside
flip: multiply by -1

Answer: $f(-x)$

    c. Suppose the graph of $g(x)$ is the same as the graph of $f(x)$, but **shifted left by 3**. Write the formula for $g(x)$ in terms of $f(x)$ in the answer box below.

left is horizontal : inside
shift left (←), negative direction : add 3

Answer: $f(x+3)$