Name: _____ **Show work needed to justify your answer.** Date: _____

HW: # 5: Math IBSL - Standard 5 - Composition of Functions 5 points

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1 **a** Given the functions

$f(x) = -x^2 + 5x$

$g(x) = 4x - 2$

$h(x) = \sqrt{x} + 1$,

find:

iii $f(h(x))$

iv $(g \circ h)(x)$

v $(f \circ f \circ f)(-1)$

vii $(g \circ f)(2) + (f \circ g)(2)$

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2 Create two different functions, $f(x)$ and $g(x)$, such that

a $f(g(x)) = g(f(x))$

b $f(g(x)) \neq g(f(x))$

c $f(2) = g(2)$

Name: _____ **Show work needed to justify your answer.** Date: _____

HW: # 5: Math IBSL - Standard 5 - Composition of Functions 5 points

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3 Given $f(x) = -2x + 5$ and $g(x) = 4x - 1$:

a find an expression for $f(g(x))$

b solve $f(g(x)) = 12$.

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4 Given $f(x) = 3x^2 - 6$ and $g(x) = -x + 4$:

a find $f(g(x))$

b using your GDC, sketch the graph of $f(g(x))$

c state the domain and range of $f(g(x))$